Université Panthéon - Assas

Ecole doctorale d'économie, gestion, information et communication

Thèse de doctorat en Sciences Economiques

Une analyse microéconomique des règles de preuve dans le contentieux civil

Université Panthéon-Assas

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Thèse de doctorat / juillet 2016

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Remerciements

La présente thèse a été réalisée sous la direction de Bruno Deffains de l'Université Paris 2 Panthéon-Assas. Je le remercie d'avoir accepté de diriger mes travaux et de m'avoir donné envie de faire de l'économie du droit.

Je tiens également à remercier les membres du jury pour avoir accepté d'évaluer mon travail. Merci à Myriam Doriat-Duban et à Claude Fluet de rapporter ma thèse, ainsi qu'à Bertrand Crettez et Michel Trommetter de participer au jury.

Cette thèse a été réalisée au sein du CRED à l'Université Paris 2 Panthéon-Assas. Merci à Damien Gaumont de m'avoir accueillie dans ce laboratoire. Je le remercie également, ainsi que Bruno Deffains, pour les conditions de travail privilégiées et les nombreuses opportunités scientifiques qui m'ont été offertes pendant ces années. Merci aussi à Stéphane Lemarié pour son accueil chaleureux à GAEL.

Je remercie l'Université Grenoble Alpes pour la décharge d'enseignement qui m'a été octroyée, et je souhaite à cet égard exprimer ma reconnaissance à Lionel Filippi, Stéphane Lemarié, Bruno Deffains et Sébastien Lotz qui m'ont soutenue dans cette démarche.

Je remercie toutes les personnes avec qui j'ai eu l'opportunité d'avoir des échanges scientifiques. Je pense aux membres du CRED, et notamment aux enseignants-chercheurs qui m'ont fourni des conseils avisés lors des séminaires doctoraux d'économie du droit. J'ai obtenu également de nombreux conseils dans les colloques et séminaires où j'ai eu l'occasion de participer. Je pense enfin aux séances de travail avec Ludivine et Bertrand qui ont

été très enrichissantes.

Mes pensées vont également vers mes collègues de STID et les doctorants du CRED, du LEMMA et de GAEL avec qui j'ai pu partager cette expérience de la thèse. Merci également aux secrétaires du CRED et de STID avec qui j'ai pu échanger tout au long de ces années.

Merci enfin à ma famille, à mes amis, et tout particulièrement à mon mari Bruno.

Résumé :

Les normes procédurales sont susceptibles d'affecter les stratégies mises en place par les parties à un litige. Nous étudions leur impact sur le volume des contentieux et sur le montant des dépenses engagées par les parties afin de gagner le procès. Ces deux composantes du coût social des litiges sont au cœur des défis que les pays développés doivent relever pour garantir l'effectivité des règles de droit substantiel. Nos travaux portent en particulier sur les règles de preuve, et nous mettons l'accent sur l'opposition entre les règles civilistes et celles de *common law*.

Après avoir défini les contours et les enjeux de notre sujet dans l'introduction générale, nous développons un plan en deux parties. La première partie porte sur le comportement des parties lorsque celles-ci ont la possibilité de parvenir à un accord. Des modèles stratégiques et optimistes sont développés pour appréhender les décisions d'aller en justice et de négocier. La seconde partie est centrée sur le processus de production de preuves qui précède l'audience finale. Nous utilisons des modèles de recherche de rente pour analyser les incitations des parties à engager des dépenses.

Les résultats suggèrent que les règles de preuve ont un impact considérable sur le coût social des contentieux. Nous montrons que le volume des litiges en France et aux États-Unis peut s'expliquer par les différentes règles de preuve s'appliquant dans ces deux pays. Notre analyse révèle également que les règles de preuves constituent un déterminant majeur du coût privé des litiges et des stratégies de défense des défendeurs.

Descripteurs :

Système judiciaire, standard de preuve, charge de la preuve, règles de découverte de preuves, négociations pré-jugement, défense affirmative, recherche de rente.

Title and Abstract:

A microeconomic analysis of rules of proof in civil litigation.

Procedural rules are likely to affect the strategies of the parties in a dispute. We study their impact on the volume of litigation and on the amount of legal expenses incurred by parties to win the trial. These two components of the social cost of litigation are at the heart of the challenges that must be addressed by developed countries to guarantee the effective enforcement of the substantive law. Our works relate more specifically to rules of proof, and the emphasis is given on the opposition between civilian and common law rules.

After defining the scope and the stakes of the thesis in the general introduction, we develop a plan in two parts. Part I studies parties' behavior when they have the possibility to negotiate to avoid a trial. Strategic and divergent expectations models are developed to apprehend parties' decisions to sue and to settle. The second Part is oriented toward the evidence production process preceding the final hearing. We use rent-seeking models to analyze parties' incentives to engage legal expenditures.

The results suggest that rules of proof have a substantial effect on the social cost of litigation. We show that the volume of litigation in the US and in France can be explained by the various rules of proof prevailing in these two countries. Moreover, our analysis reveals that the rules of proof constitute a major determinant of the private cost of litigation and of defendant's defense strategies.

Keywords:

Judicial system, standard of proof, burden of proof, discovery, pre-trial negotiations, affirmative defense, rent-seeking.

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Introduction

L'analyse économique du droit s'attache principalement à évaluer les conséquences des règles de droit substantiel sur le comportement des justiciables, par exemple en matière de responsabilité civile ou dans le domaine contractuel. Dans cette thèse, nous considérons que les normes procédurales sont nécessaires à une bonne compréhension des stratégies mises en place par les parties au litige. Notre analyse, centrée sur les règles de preuve, vise ainsi à mettre en évidence différents mécanismes par lesquels ces normes procédurales affectent le coût social des contentieux.

Le coût social des contentieux est étudié à travers deux prismes : celui de la capacité du système judiciaire à répondre à la demande de justice (Partie 1), intimement lié à la question des délais judiciaires, et celui du coût que représente une action judiciaire pour les justiciables (Partie 2). Une gestion efficace des flux judiciaires associée à un coût maîtrisé de la justice pour les parties constituent des conditions nécessaires pour garantir l'accessibilité de la justice aux citoyens, et de ce fait, rendre effectives les règles de droit substantiel.

Les pays développés font face à une problématique majeure de maîtrise du coût social de la justice civile. Le garde des Sceaux Jean-Jacques Urvoas a déclaré dans une interview parue le 3 avril 2016 : « Dans un souci de vérité et de transparence, il faut reconnaître que

la justice est à bout de souffle. Le ministère n'a plus les moyens de payer ses factures »[1]. La question du coût social des contentieux est posée plus généralement, en France, sous l'angle de la capacité du système judiciaire à répondre à la demande de justice. Dans le rapport Delmas-Goyon sur « Le juge du XXI^{ème} siècle », remis à la garde des Sceaux le 9 décembre 2013, le constat est fait de l'« épuisement du modèle visant à donner, avec des moyens limités, une réponse juridictionnelle exhaustive à une demande infinie de justice »[2]. Cela se traduit par des délais judiciaires excessivement longs, pointés du doigt par les médias à chaque nouvelle condamnation de l'Etat pour déni de justice. Ainsi, l'Etat français a été condamné le 6 avril 2016 par le Tribunal de Grande Instance de Paris à payer des dommages et intérêts s'échelonnant entre 1 600 et 6 600 euros pour fonctionnement défectueux des Prud'hommes et autres juridictions sociales[3].

Aux Etats-Unis et en Grande-Bretagne, la problématique du volume des litiges est très présente dans le débat public. Les discussions portent en particulier sur l'existence ou non d'un grand nombre d'actions judiciaires non-fondées, qui seraient initiées uniquement dans le but de négocier une transaction favorable[4]. De plus, la procédure de *discovery* (ou *disclosure* en Grande-Bretagne) est réputée très coûteuse, et les abus des parties sont souvent mis en exergue. Plusieurs rapports font état d'une forte augmentation du coût privé des

1. Source : `http://www.lejdd.fr/Politique/Jean-Jacques-Urvoas-Le-risque-existe-que-la-machine-judicaire-se-grippe-779467`

2. Cette problématique n'est pas nouvelle. D'après le rapport Coulon et al. (1997), « le volume des affaires portées devant les juridictions et la durée des instances qui en découle laissent à penser que la justice sera probablement paralysée, essentiellement au niveau des cours d'appel, en l'an 2000. »

3. D'après le rapport Lacabarats (2014), l'Etat a été condamné 66 fois en 2013 pour dysfonctionnement de la justice civile, principalement pour cause de délais excessifs. Le montant total des condamnations s'élève à 1 855 311 euros en 2013, et le nombre de requêtes ne cesse d'augmenter.

4. Voir le chapitre 1, Section 3.

litiges depuis les années 2000 [5].

Différentes réponses ont été apportées afin de maîtriser le coût social des contentieux. En France, les dernières réformes visent à rationaliser et améliorer la qualité de l'offre judiciaire. La *réforme de la justice du XIX*^{ème} *siècle* engagée en 2013 [6] prévoit ainsi de former les juges à la médiation et de simplifier certaines procédures [7]; la loi Macron du 6 août 2015 octroie davantage de pouvoirs aux bureaux de conciliation prud'homaux, et créée une nouvelle juridiction commerciale spécialisée. Dans les pays anglosaxons, la procédure civile est davantage utilisée comme un instrument de régulation du comportement des justiciables. En Angleterre et au Pays de Galle, par exemple, les *réformes Jackson* (2013) interdisent désormais de transférer certaines dépenses de la partie qui gagne le procès à son adversaire. En outre, de plus en plus de pouvoirs sont dévolus aux juges américains et anglais afin qu'ils puissent exercer un contrôle accru sur les coûts et les délais des procédures.

Pour évaluer l'efficacité de ces réformes avant et après leur mise en œuvre, il est nécéssaire de comprendre la manière dont les justiciables se saisissent de la procédure civile. Cette question est au cœur de nos travaux. Il s'agit d'étudier l'effet de l'organisation des procès sur la demande et le coût privé de la justice civile, à travers plusieurs types de décisions prises par les justiciables : les décisions d'initier une action en justice et de négocier (Partie 1), ainsi que le montant des dépenses judiciaires engagées (Partie 2).

5. C'est le cas par exemple du rapport Jackson (2009) en Grande-Bretagne et, aux Etats-Unis, des travaux présentés à la *Duke conference* (2010) relative au coût des litiges civils. Voir le chapitre 2.

6. `http://www.justice.gouv.fr/la-reforme-judiciaire-j21-12563/`

7. Le projet de loi de modernisation de la Justice du XIX^{ème} siècle, discuté à l'Assemblée Nationale en mai 2016, prévoit notamment que les divorces par consentement mutuel puissent être enregistrés par des notaires et que les PACS et changements de prénoms puissent être prononcés par des maires.

Nos travaux présentent deux spécificités. D'une part, ils sont consacrés à un type de règles procédurales relativement peu explorées dans la littérature, les règles de preuve. Ces règles organisent le processus de production des preuves et orientent le magistrat chargé de juger une affaire lorsque celui-ci évalue les preuves. Elles sont parfois difficiles à appréhender car sujettes à de multiples interprétations. Les travaux présentés ici ont pour objet de proposer un cadre d'étude et une modélisation des règles de preuve en s'appuyant sur des définitions issues de la littérature. Nous étudions ainsi différentes règles de preuve : le standard de preuve, la charge de la preuve et le processus de découverte des preuves.

D'autre part, nous analysons les conséquences des règles de preuves dans une perspective comparée. Alors que la majorité de la littérature en économie du droit a comme toile de fond la *common law*, nous mettons l'accent sur les règles de la tradition civiliste et prenons l'exemple de la procédure civile française. Les règles de preuve sont en effet très différentes dans les deux traditions juridiques, ce qui justifie cette approche. De plus, la littérature s'inscrivant dans une perspective comparée est essentiellement tournée vers l'*origine* du droit et conclut à la supériorité de la *common law*. Notre étude des *conséquences* du droit considère plus finement la substance des normes et aboutit de ce fait à des résultats plus nuancés.

La Section 1 de l'introduction fournit un aperçu général du coût social des contentieux en s'appuyant sur différents éléments empiriques. Nous étudions d'abord la situation de la France avant d'établir quelques comparaisons internationales. La Section 2 montre que la procédure civile peut être utilisée pour maîtriser le coût social des litiges. Elle met en lumière l'intérêt d'une analyse comparée des conséquences des règles de procédure civile —et en particulier du droit de la preuve— sur les comportements des justiciables, et *in fine*

sur le coût social des contentieux. La Section 3 montre l'intérêt de l'analyse économique du droit comme cadre d'analyse et décrit plus précisément le cadre méthodologique que nous mobilisons par la suite. Le plan de la thèse est développé dans la Section 4.

1 Le coût social des litiges

1.1 En France

L'objectif de cette partie est de faire un état des lieux du coût social des contentieux et de son évolution en France, en s'appuyant sur des éléments empiriques. Les Annuaires Statistiques de la Justice [8] et les Chiffres Clés de la Justice [9], publiés par le Ministère de la Justice, permettent d'évaluer la demande de justice et la capacité de notre système judiciaire à y répondre dans un délai raisonnable. Nous tentons également d'apprécier le coût de la justice pour les justiciables. Ce coût privé est plus difficile à mesurer, car les frais de justice ont de multiples origines (frais d'avocat, d'expertise, etc.). Nous nous appuyons donc sur des rapports publics afin d'apporter quelques données empiriques à ce sujet.

Notre analyse aboutit à un certain nombre de constats que nous synthétisons avant de présenter les données empiriques de manière plus détaillée. Tout d'abord, les chiffres révèlent que le nombre d'affaires civiles nouvelles tend, dans l'ensemble, à augmenter. En particulier, le nombre d'affaires portées devant les Tribunaux de Grande Instance a augmenté de 8 % entre 2012 et 2014. Cela a pu avoir des conséquences importantes sur l'orga-

8. http://www.justice.gouv.fr/budget-et-statistiques-10054/annuaires-statistiques-de-la-justice-10304/

9. http://www.justice.gouv.fr/budget-et-statistiques-10054/chiffres-cles-de-la-justice-10303/

nisation de la justice puisque ce contentieux représente près de 900 000 affaires nouvelles par an en 2014.

En outre, la hausse du volume des contentieux paraît assez préoccupante dans les Cours d'Appel (+19 % entre 2007 et 2014), d'autant qu'elle concerne toutes les juridictions d'origine [10]. Les affaires portées devant la Cour de Cassation connaissent une hausse similaire (+20 % entre 2007 et 2012). Ainsi, l'accroissement de la demande de justice ne provient pas seulement d'une volonté croissante d'initier une action en justice mais également d'une insatisfaction des justiciables à l'égard des jugements rendus.

Concernant les délais judiciaires, on observe des durées moyennes très longues dans les Conseils de Prud'hommes (15,4 mois en 2014, hors référés) et les Cours d'Appel (13 mois en 2014, référés compris), et la tendance est à la hausse pour ces deux juridictions. Pour les Conseils de Prud'hommes, cela semble provenir d'une difficulté à s'adapter à la demande de justice : depuis 2008, le nombre d'affaires nouvelles apparaît décorrélé du nombre d'affaires résolues, ce qui n'est pas le cas dans les autres juridictions. Pour les Cours d'Appel, on peut penser que la hausse des délais résulte de la forte augmentation du nombre d'affaires entrantes. Il faut souligner que le nombre d'affaires résolues est, à de rares exceptions près, inférieur au nombre d'affaires nouvelles. Il s'agit d'une caractéristique généralisée du système judiciaire, puisque cela concerne toutes les juridictions. Même si la différence entre les affaires entrantes et sortantes n'est pas toujours significative, elle peut avoir pour conséquence d'augmenter le stocks d'affaires à traiter et les délais à long terme.

Il n'y a pas de données permettant d'évaluer le coût privé moyen des contentieux en France. Il faut toutefois noter que les justiciables n'ont pas à payer de frais de procédure pour saisir un tribunal [11]. Cela ne signifie cependant pas que la justice est gratuite, puisque

10. Excepté les Tribunaux de Commerce.

11. Excepté dans les Tribunaux de Commerce.

les justiciables peuvent avoir à payer des frais d'avocat, d'expertise ou d'huissier. D'après une étude intitulée « Etude sur la transparence des coûts des procédures judiciaires civiles dans l'UE » (2007) et commanditée par la Commission Européenne, les honoraires d'avocat sont plutôt élevés en France, mais la représentation par un avocat n'est pas toujours obligatoire.

Enfin, d'après le rapport de la commission de réflexion sur l'expertise (Bussière and Autin, 2011), les frais d'expertise peuvent considérablement augmenter les coûts de procès. L'expertise joue un rôle croissant dans les juridictions civiles, notamment avec le développement des nouvelles technologies, qui accroît sans cesse son champ d'application. Bien que ces mesures vont dans le sens d'une amélioration de la qualité des jugements rendus, les auteurs de ce rapport soulignent qu'elles sont susceptibles de générer des coûts qui peuvent être inutiles.

La demande de justice

Le Ministère de la Justice publie chaque année des données sur le nombre d'affaires nouvelles dans les juridictions françaises, permettant ainsi d'évaluer l'ampleur et l'évolution de la demande de justice. En 2014, il y a eu près de 2,75 millions d'affaires nouvelles dont 2,5 millions d'affaires au fond. Le nombre d'affaires nouvelles tend à augmenter entre 2005 et 2014 (Figure 1), essentiellement du fait d'une hausse du nombre d'affaires au fond [12].

Les Figures 2, 3 et 4 détaillent l'évolution du nombre d'affaires nouvelles par type de

12. Les données sont indisponibles pour le nombre d'affaires nouvelles dans les Tribunaux de Commerce en 2006. Pour cette juridiction, nous avons retenu le nombre d'affaires en 2005 pour l'année 2006.

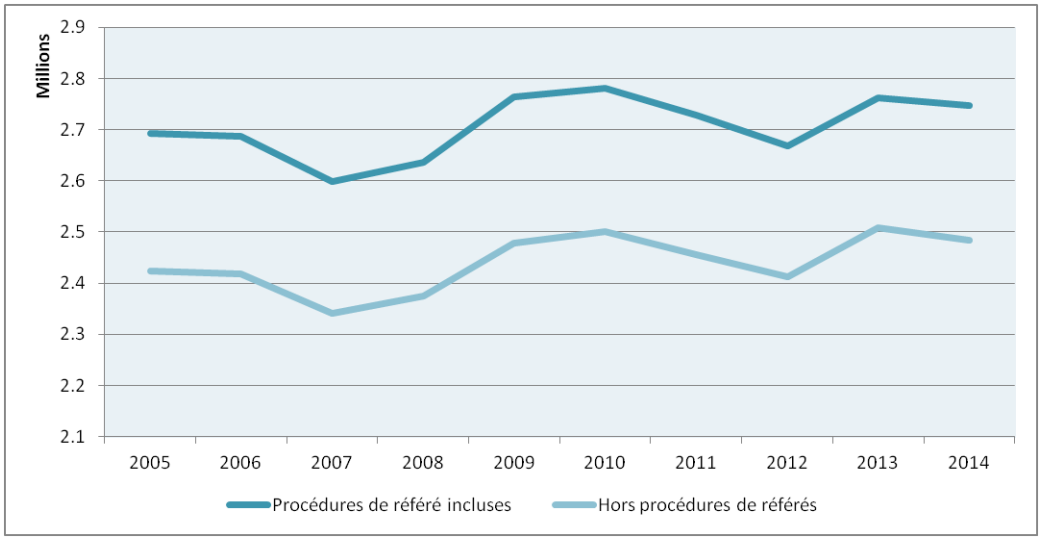


FIGURE 1 – Nombre d'affaires nouvelles civiles et commerciales en France

juridiction [13]. Le nombre d'affaires portées devant les Tribunaux de Grande Instance se situe chaque année entre 800 000 et 850 000 (Figure 2). Depuis 2012, on constate une augmentation du nombre d'affaires nouvelles qui se rapproche de 900 000 alors qu'il n'avait pas dépassé 850 000 sur l'ensemble de la période considérée. Le nombre d'affaires portées devant les tribunaux d'instance a augmenté entre 2006 et 2010, passant de 525 000 à 627 000. Il a depuis diminué pour atteindre 582 000 en 2014. Aux prud'hommes, il y a entre 140 000 et 180 000 nouvelles affaires chaque année, et la tendance est à la baisse pour les tribunaux de commerce, avec environ 158 000 affaires en 2014 (Figure 3).

Les juridictions de degré supérieur font face à une demande accrue des justiciables (Figure 4). Les Cours d'Appel ont vu augmenter le nombre d'affaires nouvelles de 210 000 en 2007 à 252 000 en 2014 soit une hausse d'environ 19 % entre ces deux dates. Pour ce

13. Les graphiques ne tiennent pas compte des procédures de référé, sauf pour les Cours d'Appel. Ces données sont à interpréter avec précaution dans la mesure où l'offre de justice a beaucoup évolué sur les années considérées. Par exemple, le nombre de Tribunaux de Commerce est passé de 191 à 135 en 2009.

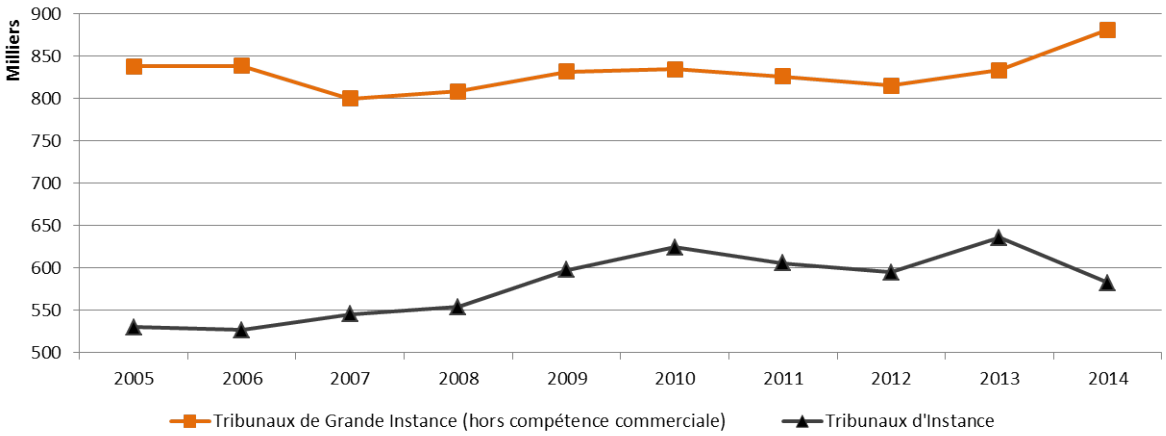


FIGURE 2 – Affaires nouvelles dans les juridictions de droit commun de première instance

qui est de la Cour de Cassation, le nombre d'affaires nouvelles a augmenté continuellement entre 2007 et 2012, passant de 18 200 à 21 800 affaires par an (+ 20 % en 5 ans). Il a ensuite diminué en 2013 pour augmenter en 2014 et dépasser à nouveau la barre des 21 000 affaires nouvelles.

La Figure 5, qui représente l'évolution du nombre d'affaires nouvelles en appel selon la juridiction d'origine, montre que la hausse du nombre d'affaires qui font l'objet d'un appel concerne quasiment toutes les juridictions d'origine[14]. Les affaires en provenance des Tribunaux d'Instance, des Conseils de Prud'hommes et des Tribunaux des Affaires de Sécurité Sociale sont en augmentation depuis 2009. Celles qui proviennent des Tribunaux de Grande Instance ont augmenté depuis 2011, après une forte baisse entre 2009 et 2011.

Enfin, la Figure 6 montre l'évolution de la demande de justice dans les Tribunaux d'Instance et les Tribunaux de Grande Instance (hors compétence commerciale) selon le type de contentieux[15]. Les affaires nouvelles liées au droit de la famille représentent une

14. Source des données : Ministère de la Justice, tableaux de l'annuaire, activités des juridictions.

15. Seuls les domaines du droit qui sont quasiment exclusivement traités par les Tribunaux de Grande Instance et les Tribunaux d'Instance ont été retenus.

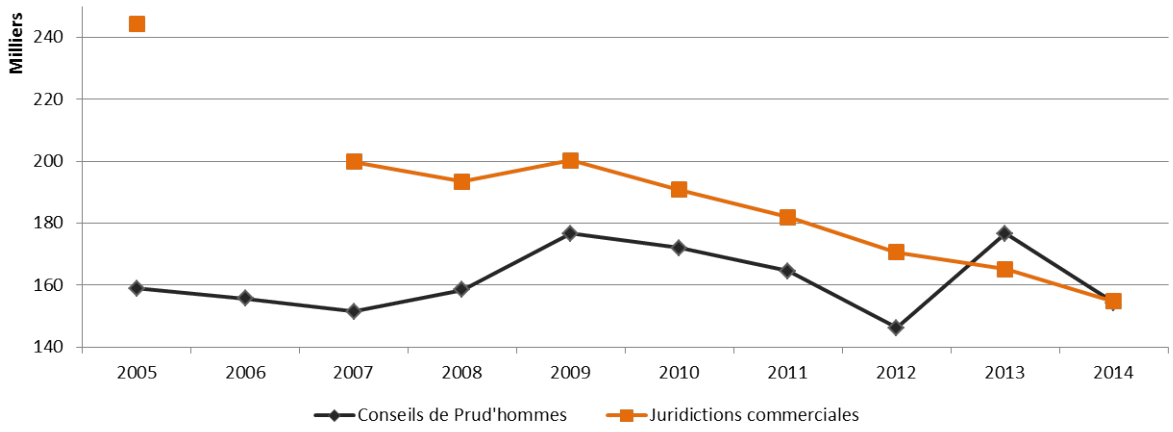


FIGURE 3 – Affaires nouvelles dans les juridictions spécialisées de première instance

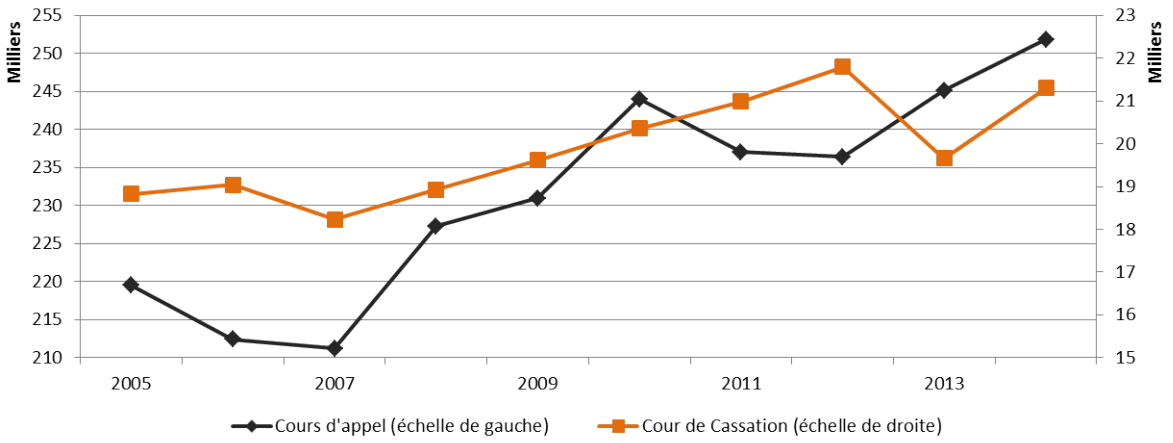


FIGURE 4 – Affaires nouvelles dans les juridictions supérieures

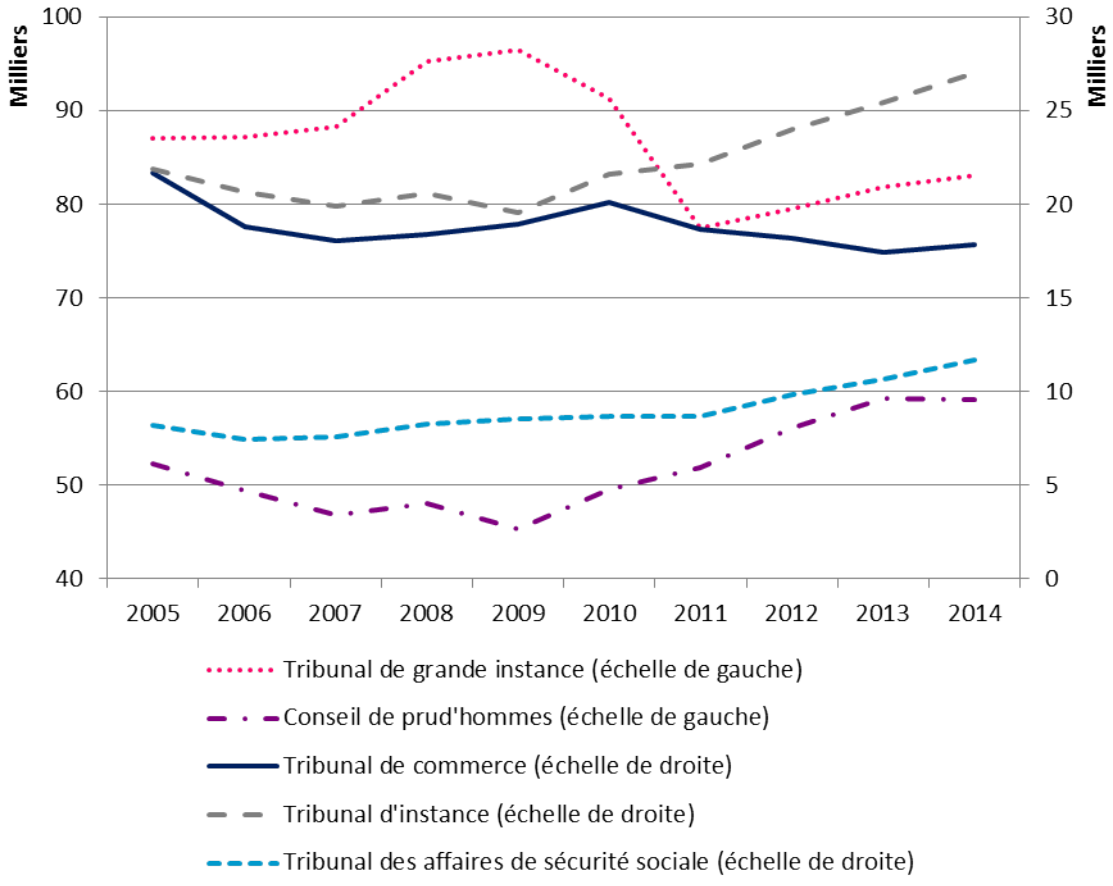


FIGURE 5 – Affaires nouvelles dans les Cours d'appel selon la juridiction d'origine

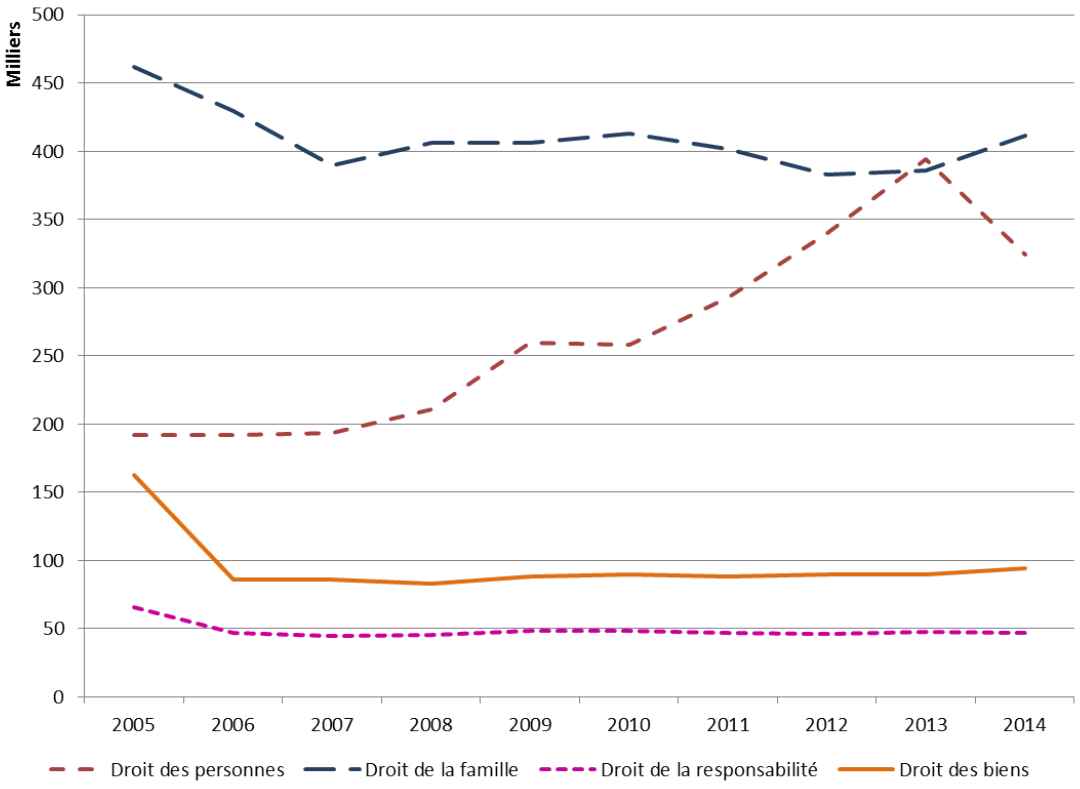


FIGURE 6 – Affaires nouvelles dans les TGI et les TI par type de contentieux

grande part des affaires nouvelles avec un contentieux se situant autour de 400 000 nouvelles affaires par an. Le contentieux relatif au droit des personnes est en augmentation depuis 2005, excepté entre 2013 et 2014 où il a connu une forte diminution. Enfin, les contentieux de la responsabilité et du droit des biens sont relativement stables sur la période considérée, et concernent un nombre restreint d'affaires (respectivement 47 000 et 97 000 affaires nouvelles en 2014).

En conclusion, ces statistiques ne révèlent pas une augmentation drastique et brutale de la demande de justice en France. Cependant, le nombre total d'affaires nouvelles civiles et commerciales a tendance à augmenter à moyen terme. Pour ce qui est des affaires nouvelles par juridiction, on observe une petite hausse du nombre d'affaires nouvelles dans les

Tribunaux de Grande Instance depuis 2012, et une hausse assez conséquente dans les juridictions de degré supérieur. Dans ce dernier cas, la hausse des affaires provient de toutes les juridictions de première instance, excepté les Tribunaux de Commerce. Ainsi, l'accroissement de la demande de justice semble venir davantage d'une insatisfaction des jugements rendus plutôt que d'une volonté croissante d'initier une action en justice.

Le traitement des affaires

Le volume des contentieux ne dépend pas que du nombre d'affaires nouvelles mais également de la manière dont les tribunaux répondent à la demande de justice. La Commission Européenne pour l'Efficacité de la Justice (CEPEJ) préconise l'utilisation du *clearance rate* pour évaluer le traitement des affaires par les tribunaux [16], qui se calcule comme suit :

$$Clearance\ Rate = \frac{\text{Nombre d'affaires terminées}}{\text{Nombre d'affaires nouvelles}} * 100$$

Si le ratio est supérieur à 100 %, le système judiciaire a la capacité de traiter plus d'affaires qu'il n'y a d'affaires nouvelles, et on doit s'attendre ainsi à une diminution du stock d'affaires.

Dans le tableau ci-dessous (Table 1), le *clearance rate* est calculé pour les différentes juridictions civiles et commerciales en 2014, à partir du nombre d'affaires nouvelles et terminées [17]. On constate que ce taux est toujours inférieur (ou égal) à 100 %, ce qui signifie qu'il y a davantage d'affaires qui sont entrées dans le système judiciaire civil français que d'affaires qui ont été résolues. Pour la majorité des juridictions, il est situé entre 90 % et

16. Le *clearance rate* est également appelé taux de variation du stock d'affaires pendantes.
17. Source : chiffre clé de la justice. Il s'agit du nombre total d'affaires qui inclut les procédures de référé.

	Nombre d'affaires nouvelles	Nombre d'affaires terminées	Clearance Rate
Tribunaux de Grande Instance hors commerce	994 838	947 618	95%
Tribunaux d'Instance et juridictions de proximité	669 108	635 055	95%
Conseils de Prud'hommes	187 651	188 189	100%
Juridictions commerciales	176 726	160 923	91%
Tribunaux des affaires de sécurité sociale	100 255	85 574	85%
Juge des enfants (assistance éducative)	344 828	344 828	100%
Cours d'appel	251 814	236 551	94%
Cour de Cassation	21 295	19 636	92%

TABLE 1 – Le *clearance rate* dans les juridictions civiles et commerciales en 2014

100 %, sauf pour les Tribunaux des Affaires de Sécurité Sociale où il atteint un niveau faible (85 %).

Si on observe l'évolution du nombre d'affaires nouvelles et terminées en France, on constate que le nombre d'affaires nouvelles est toujours légèrement supérieur au nombre d'affaires résolues dans les Tribunaux d'Instance et de Grande Instance (Figure 7). Cela traduit une certaine efficacité dans le traitement des affaires puisque les tribunaux sont en mesure d'absorber une augmentation de la demande de justice. En revanche, le fait que le *clearance rate* soit quasiment toujours inférieur à 100 % peut avoir pour conséquence d'augmenter progressivement le stock d'affaires à traiter, et donc les délais judiciaires.

Jusqu'en 2007, les Conseils de Prud'hommes affichaient un profil similaire à celui des Tribunaux d'Instance et de Grande Instance, avec un nombre d'affaires nouvelles supérieur mais proche du nombre d'affaires résolues. A partir de 2007, le nombre d'affaires nouvelles semble se décorréler du nombre d'affaires résolues : on observe une forte hausse du nombre d'affaires nouvelles entre 2007 et 2009 —conséquence possible de la crise économique de 2007— et une diminution concomitante du nombre d'affaires résolues. Cela reflète une difficulté des Conseils de Prud'hommes à s'adapter à la demande de justice qui leur est adressée. Dans les juridictions commerciales, on observe une baisse conjointe du nombre

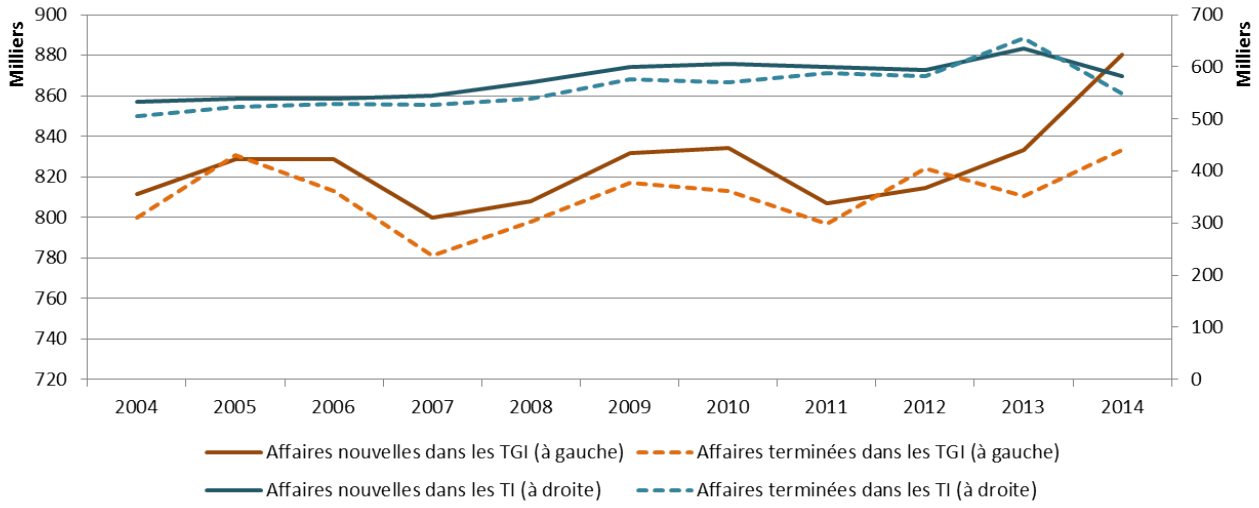


FIGURE 7 – Affaires nouvelles et terminées dans les TGI et les TI

d'affaires nouvelles et du nombre d'affaires terminées, avec un nombre d'affaires sortantes plus faible que le nombre d'affaires nouvelles.

Les délais judiciaires

La question de la lenteur de la justice est très présente dans les débats liés au fonctionnement de la justice civile en France. La Table 2 présente la durée moyenne des affaires terminées en 2014 dans plusieurs juridictions civiles [18]. Les délais sont particulièrement longs pour les affaires traitées par les Cours d'Appel (13 mois, référés compris) et par les Conseils de Prud'hommes (15,4 mois, hors référés). On remarque une faible différence entre la durée des procédures de référé et des procédures au fond dans les Tribunaux d'Instance, qui peut traduire la volonté des justiciables de détourner les procédures de référé

18. Source : Ministère de la Justice, tableaux de l'annuaire statistique, activités des juridictions. Données disponibles en ligne : `http://www.justice.gouv.fr/statistiques.html`

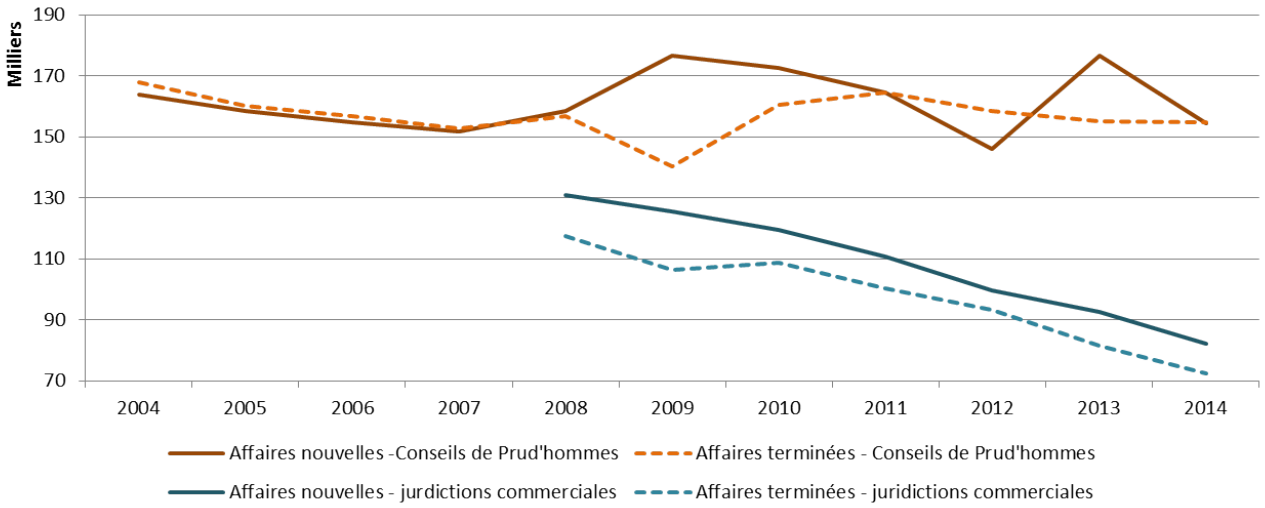


FIGURE 8 – Affaires nouvelles et terminées dans les CPH et les Tribunaux de Commerce

afin d'obtenir une décision judiciaire plus rapidement.

(Nombre de mois)	**Fond**	**Référé**
Tribunaux d'instance	5, 4	3, 6
Tribunaux de Grande Instance	7, 5	2
Conseils de Prud'hommes	15, 4	1, 8
Juridictions commerciales	8, 5	1, 9
Cour d'Appel (fond + référé)	13	

TABLE 2 – Durée moyenne des litiges en France en 2014

En termes d'évolution (Figure 9), on observe une hausse conséquente de la durée moyenne des affaires portées devant les Conseils de Prud'hommes entre 2009 (12,7 mois) et 2013 (15,4 mois) suivie d'une diminution entre 2013 et 2014 [19]. La durée moyenne des

19. Les données de la Figure 9 ne tiennent compte que des affaires au fond, sauf pour les données relatives aux Cours d'Appel qui incluent les procédures de référé.

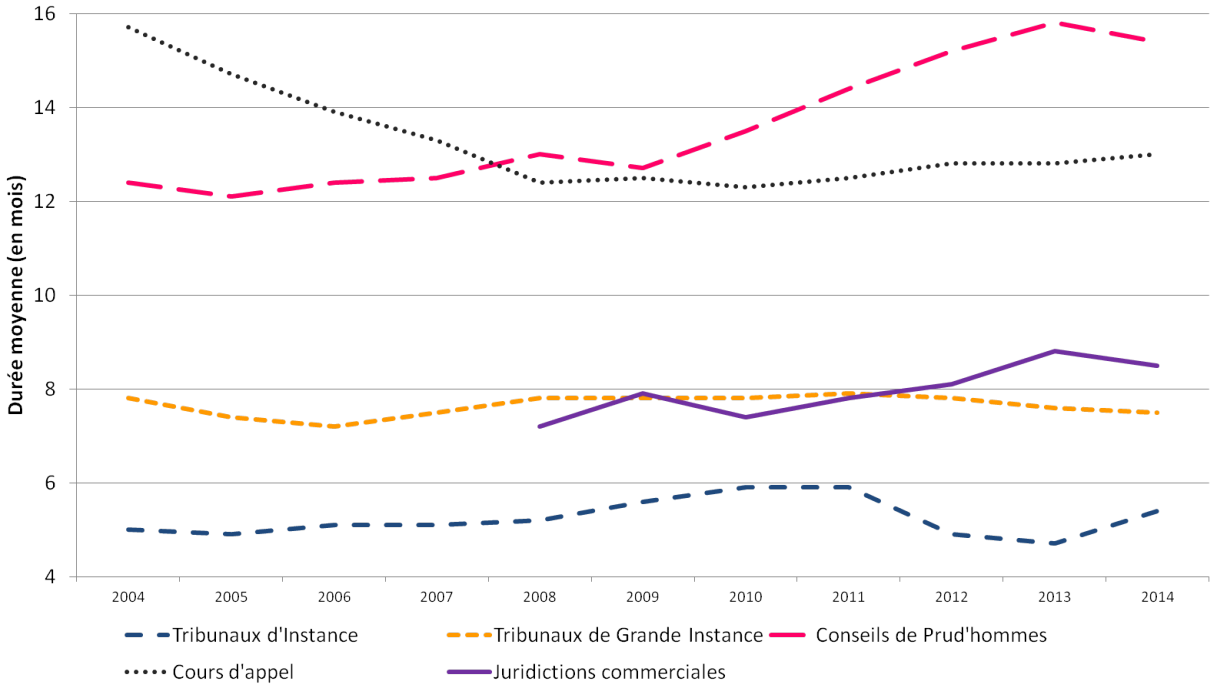


FIGURE 9 – Durée moyenne des litiges dans les principales juridictions civiles françaises

affaires traitées par les Cours d'appel a diminué entre 2004 et 2008, et elle est en légère augmentation depuis 2010 (12,3 mois en 2010, 13 mois en 2014). Les analyses précédentes suggèrent que la hausse des délais judiciaires résulte plutôt d'une difficulté de traitement des affaires pour les Conseils de Prud'hommes alors qu'elle est due à l'augmentation du nombre d'affaires nouvelles pour les Cours d'appel. Les affaires traitées par les Tribunaux de Grande Instance ont une durée stable sur les années étudiées, inférieure à 8 mois. La durée moyenne des procédures dans les Tribunaux d'Instance est plus variable mais toujours inférieure à 6 mois. Dans les juridictions commerciales, on observe une tendance haussière malgré la réduction du volume du contentieux mise en exergue dans la section précédente.

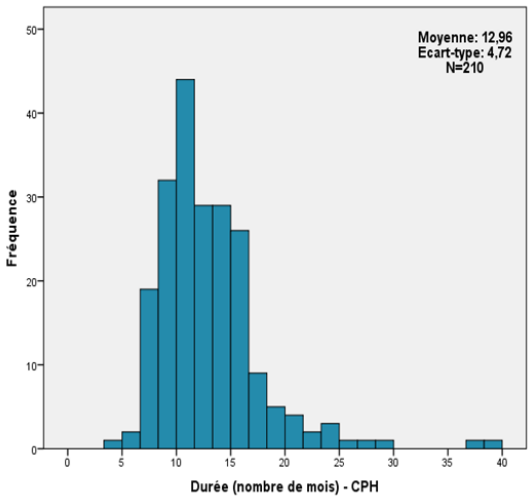
Finalement, l'annuaire statistique de la justice fournit également des données pour chaque juridiction française, ce qui permet d'avoir un aperçu des disparités géographiques.

La Figure 10 représente la distribution des juridictions françaises en fonction de la durée moyenne des affaires terminées en 2014. On constate que les disparités sont assez faibles pour les Cours d'Appel du fait de leur nombre plus faible. Certaines Cours d'Appel affichent cependant des délais très longs, entre 16 et 20 mois. Pour les Conseils de Prud'hommes et les Tribunaux d'Instance, la distribution est plutôt étalée vers la droite. Certaines juridictions sont caractérisées par des délais très élevés, parfois supérieurs à 20 mois.

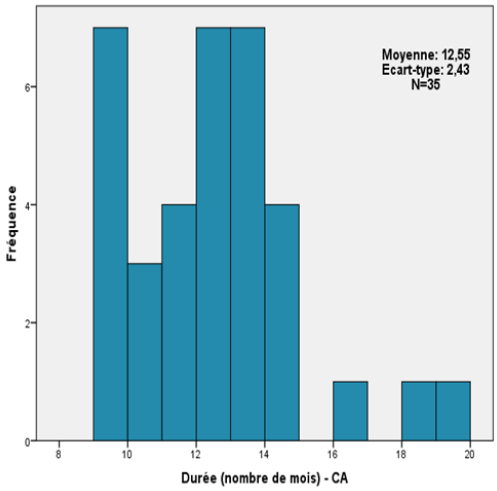
Le coût privé des litiges

Le coût privé des litiges comprend les frais de procédure payés au tribunal par le demandeur, les frais d'avocat, le coût des expertises et les frais d'huissier. D'autres coûts non-monétaires sont supportés par les justiciables, comme le temps passé sur le litige, qui dépend des efforts entrepris par les justiciables mais également des délais judiciaires qui s'imposent à eux. Cette forte diversité quant aux facteurs qui déterminent le coût privé de la justice rend difficile l'évaluation de ce coût et les comparaisons internationales. Il s'agit dans cette section de donner quelques éléments qui permettent d'en apprécier son ampleur.

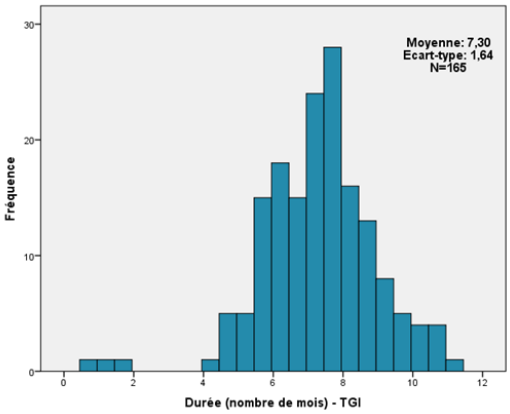
Pour initier une affaire civile, les justiciables français ne payent pas de frais de procédure, excepté dans les tribunaux de commerce où ils sont de l'ordre de 80 euros pour les deux parties, pour une assignation au fond. Les frais de justice sont donc constitués essentiellement des frais d'avocat et d'expertise. Une faible proportion des frais d'avocat est réglementée, notamment lorsque la représentation par un avocat est obligatoire. En règle générale, il s'agit d'honoraires, librement négociés entre l'avocat et son client. Les honoraires prennent généralement la forme d'une rémunération horaire, et plus rarement



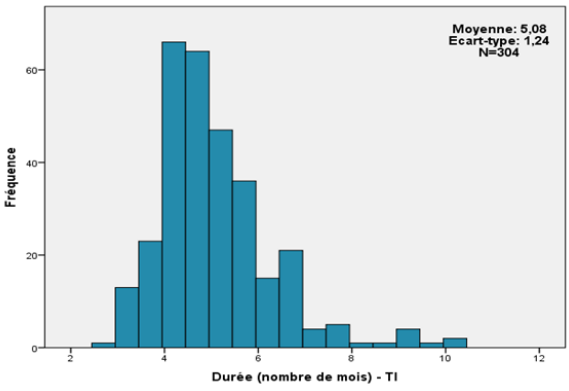
(a) Conseils de Prud'hommes



(b) Cours d'Appel



(c) Tribunaux de Grande Instance



(d) Tribunaux d'Instance

FIGURE 10 – Répartition de la durée des litiges selon les juridictions en 2014

d'une rémunération forfaitaire. Les avocats ne peuvent être rémunérés en fonction du résultat de l'affaire (*Contingent Fees*), sauf à titre de rémunération complémentaire. Cette pratique est cependant peu répandue.

Quelques statistiques sur les honoraires d'avocat sont disponibles dans une étude intitulée « Etude sur la transparence des coûts des procédures judiciaires civiles dans l'UE », commanditée par la Commission Européenne et publiée en 2007 [20]. Un des objectifs de cette étude était de réaliser une enquête auprès d'experts nationaux afin d'évaluer les frais de justice. D'après cette étude, le montant des honoraires d'avocat se situerait en France en moyenne entre 250 et 499 euros, ce qui est assez élevé (« Lawyer's fee is somewhat dissuasive. »). Les auteurs de cette étude notent cependant que la représentation par un avocat n'est pas toujours obligatoire.

Aux frais d'avocat viennent s'ajouter les frais d'expertise. Les expertises judiciaires sont des mesures ordonnées par le juge. Elles sont souvent ordonnées avant un procès, dans le cadre des mesures d'instruction *in futurum*, autorisées dès lors qu'il existe un motif légitime de conserver ou d'établir la preuve de faits dont pourrait dépendre la solution d'un litige (Art. 145 CPC). Elles peuvent également être ordonnées pendant un procès si une partie ne dispose pas d'éléments suffisants pour prouver un fait qu'elle allègue malgré les efforts qu'elle a poursuivis.

Une étude du Ministère de la Justice parue en 2003 donne quelques indications quant au montant des frais d'expertises (Arnault and Krief, 2003). Les données portent sur 2 063 expertises et proviennent d'une enquête, réalisée en 2001 auprès de 31 Cours d'Appel (sur 35) et 57 Tribunaux de Grande Instance (sur 181). Cette étude montre que la moitié des expertises a un coût supérieur à 1 198 euros. Le coût moyen est cependant plus élevé (2 174

20. Cette étude est disponible à l'adresse suivante : `https://e-justice.europa.eu/content_costs_of_proceedings-37-fr.do`

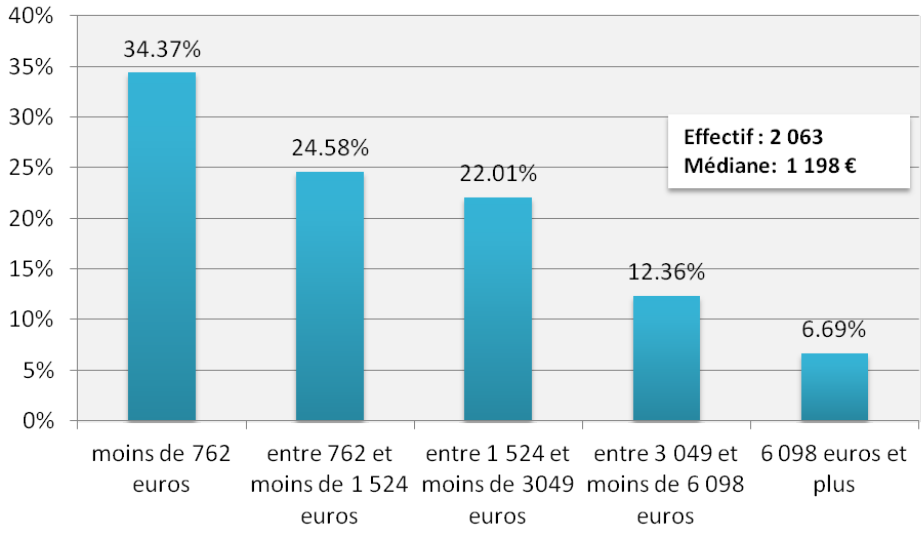


FIGURE 11 – Le coût des expertises en France en 2001

euros), puisque certaines expertises sont très coûteuses (jusqu'à 150 000 euros). Ainsi, près de 7 % des expertises ont un coût supérieur à 6 098 euros (Figure 11) et 1,5 % ont un coût qui excède 12 196 euros. En outre, le coût moyen de ces expertises varie fortement selon le domaine : il s'élève à 3 475 euros dans le bâtiment, 3 271 euros en matière de finance et de comptabilité et 1 295 euros dans le domaine de la responsabilité médicale.

Le rapport de la commission de réflexion sur l'expertise, réalisé par Chantal Bussière, premier président de la Cour d'Appel de Bordeaux et Stéphane Autin, Procureur Générale de la Cour d'Appel de Pau, apporte un éclairage plus récent (Bussière and Autin, 2011). Il tend à montrer que l'expertise joue un rôle croissant dans le fonctionnement de la justice civile, avec 53 914 rapports d'expertise déposés en 2009. Cela vient notamment du « développement rapide des sciences et des nouvelles technologies [qui] accroît sans cesse le champ d'application de l'expertise ». Pour les auteurs de ce rapport, les frais d'expertise sont élevés et peuvent contribuer à réduire l'accès à la justice, en particulier pour les justiciables qui sont inéligibles à l'aide judiciaire. Au-delà de la charge financière qu'impliquent

les expertises, celles-ci contribuent à accroître les délais, puisque la durée moyenne des expertises, d'après les auteurs, est de 15,3 mois. Enfin, les auteurs mentionnent l'existence d'un surcoût lié à la non-coopération des parties. Des justiciables de mauvaise foi peuvent utiliser stratégiquement ces mesures d'expertise afin de prolonger la durée des procédures et d'alourdir les coûts pour la partie adverse, par exemple en tardant à communiquer leurs pièces ou en produisant des pièces sans ordre et sans bordereau.

L'étude sur la transparence des coûts des procédures judiciaires civiles dans l'UE (2007) pointe également du doigt un accroissement du volume et du coût des mesures d'expertise. D'après ses auteurs, le recours aux expertises est très commun et les frais d'expertise sont assez élevés, pouvant atteindre 6 000 euros dans le domaine de l'assurance et 4 000 euros en matière de Nouvelles Technologies d'Information et de Communication.

Il faut également noter que les justiciables recourent parfois à des expertises extra-judiciaires, qui sont dites « amiables » si elles sont mises en œuvre par les deux parties, ou « unilatérales » dans le cas inverse. Contrairement à l'expertise judiciaire, ces mesures ne sont pas ordonnées par le juge et ne sont pas régies par le Code de Procédure Civile. La jurisprudence tend à accepter les rapports d'expertise amiable comme éléments de preuve dès lors qu'ils ont été soumis à la contradiction lors de l'audience (Vergès, 2012). Ces expertises sont susceptibles d'accroître les frais de justice pour la partie qui les met en œuvre, mais également pour son adversaire qui doit les contester.

Enfin, certains justiciables sont éligibles à l'aide judiciaire et bénéficient ainsi d'une prise en charge totale ou partielle des frais de justice qui leur incombe. Cette aide vise à permettre aux citoyens qui n'ont pas les ressources suffisantes d'accéder à la justice. Son montant est fonction des ressources mensuelles des justiciables et du nombre de personnes qu'ils ont à leur charge. Pour les affaires portées devant les tribunaux en 2016, l'aide

judiciaire est totale pour une personne (sans enfant) dont les ressources mensuelles sont inférieures à 1 000 euros et elle est partielle si ces ressources se situent entre 1 001 et 1 500 euros [21]. En 2012, d'après la CEPEJ, 915 563 affaires portées devant les tribunaux ont pu bénéficier de l'aide judiciaire pour un budget moyen de 337 euros par affaire. Au total, cela représente pour l'Etat un budget de plus de 367 millions d'euros.

1.2 Comparaisons internationales

Dans cette partie, nous passons en revue quelques éléments empiriques afin de comparer le coût social des contentieux en France à celui des autres pays développés. Nous utilisons dans un premier temps les données du *World Justice Project* [22] et celles du programme *Doing Business* [23], qui donnent un aperçu général de l'évaluation des systèmes judiciaires civils. Ensuite, nous fournissons quelques éléments plus détaillés sur le coût social des litiges aux Etats-Unis et en Grande-Bretagne. Enfin, nous comparons la situation de la France à celle d'autres pays européens en nous appuyant sur les données de la Commission Européenne pour l'Efficacité de la Justice (CEPEJ, 2014), qui publie tous les deux ans un rapport d'évaluation de l'efficacité et de la qualité des procédures judiciaires des 47 Etats membres du Conseil de l'Europe.

Les conclusions de cette analyse sont d'abord résumées, puis nous présentons les sta-

21. Pour des ressources comprises entre 1 001 euros et 1 182 euros, l'Etat contribue à hauteur de 55 % aux frais qu'entraîne la procédure, et à hauteur de 25 % pour des ressources comprises entre 1 183 et 1 500 euros. Source : `https://www.formulaires.modernisation.gouv.fr/gf/getNotice.do?cerfaNotice=51036&cerfaFormulaire=12467`

22. `http://worldjusticeproject.org/rule-of-law-index`

23. `http://francais.doingbusiness.org/data`

tistiques utilisées de manière plus détaillée. Les données du *World Justice Project* et celles du programme *Doing Business* placent la France dans la moyenne des pays développés. Le *World Justice Project* élabore un indicateur (sur une échelle allant de 0 à 1) qui mesure le fonctionnement de la justice civile. Il est égal à 0,70 en France, ce qui est légèrement en dessous de la médiane des pays à haut revenu (0,72). Les pays d'Europe du Sud obtiennent globalement des résultats inférieurs à ceux de la France alors que les pays d'Europe du Nord, ainsi que l'Allemagne et les Pays-Bas, obtiennent de meilleurs scores. Par ailleurs, les scores des Etats-Unis et de la Grande-Bretagne sont comparables à ceux de la France.

Pour ce qui est des données du programme *Doing Business*, nous ne retenons que les indicateurs ayant trait à la procédure civile. La France est située un peu au-dessus de la moyenne de l'OCDE en ce qui concerne le coût d'exécution des contrats et celui du règlement de l'insolvabilité. Elle est en revanche moins bien placée quant au temps de règlement de l'insolvabilité, avec un score qui reste proche de la moyenne des pays de l'OCDE.

Notre analyse du coût social des litiges dans les pays anglo-saxons met en évidence des différences notables par rapport à la situation de la France. A partir de données publiques sur les tribunaux fédéraux et les tribunaux d'Etat, nous montrons que la propension à saisir la justice civile est environ deux fois plus élevée (rapportée au nombre d'habitants) aux Etats-Unis qu'en France. Pour ce qui est du traitement des affaires judiciaires, le *clearance rate*[24] est globalement plus élevé dans les *state courts*, et les délais semblent généralement plus courts dans les tribunaux fédéraux qu'en France. Cependant, le constat d'une plus grande efficacité des tribunaux américains doit être relativisé, car la majorité des affaires se terminent par une solution négociée aux Etats-Unis. Par exemple, seules 1,18 % des affaires

24. Le *clearance rate* est égal au ratio du nombre d'affaires résolues sur le nombre d'affaires nouvelles.

portées devant les *district courts* se sont terminées par un procès en 2014, avec une durée moyenne supérieure à deux ans. Enfin, la question du coût des litiges pour les justiciables est centrale aux Etats-Unis et en Grande-Bretagne, depuis de nombreuses années. Quelques éléments empiriques suggèrent que les coûts, en particulier ceux liés à la *discovery* sont en augmentation. Nous verrons par la suite que plusieurs réformes ont été mises en œuvre pour tenter de les maîtriser.

Enfin, les données de la CEPEJ révèlent que la France se situe dans la moyenne des pays européens, notamment en ce qui concerne la demande de justice et la gestion des flux judiciaires. En revanche, les délais sont particulièrement élevés par rapport aux autres pays européens pour les trois contentieux étudiés (licenciement, divorce et insolvabilité). Pour ce qui est des frais de justice, la France fait figure d'exception (avec le Luxembourg) en permettant aux justiciables d'initier gratuitement une action judiciaire. En outre, l'aide judiciaire est assez généreuse par rapport aux autres pays européens, avec un nombre de bénéficiaires par habitant assez élevé. Davantage de statistiques seraient nécéssaires pour comparer les autres coûts, comme les frais d'avocat et d'expertise.

Les statistiques du World Justice Project et du programme Doing Business

Plusieurs programmes ont vu le jour dans les années 2000 afin d'évaluer l'efficacité du droit et des institutions et d'en rendre compte aux citoyens, parmi lesquels le *World Justice Project* et le programme *Doing Business*. Les indicateurs du *World Justice Project* (WJP) sont construits à partir d'enquêtes réalisées auprès de 100 000 ménages et de 2 400 experts dans 102 pays. Ces statistiques constituent un premier éclairage intéressant puisque l'un des indicateurs porte sur la qualité des procédures judiciaires civiles. Compris entre 0 et 1,

cet indicateur est d'autant plus élevé que la procédure civile est performante. En 2015, le score de la France est de 0,7 ce qui est légèrement en dessous de la médiane des pays à haut revenus (0,72). Si on le compare avec le score obtenu par les autres pays à haut revenu, le score attribué à la justice civile française apparaît relativement faible (Figure 12). Les pays d'Europe du Nord (Danemark, Norvège, Suède) obtiennent un meilleur score, ainsi que l'Allemagne, la Belgique, l'Angleterre et les Pays-Bas, qui atteignent la première place du classement. Les pays d'Europe du Sud (Italie, Grèce, Espagne, Portugal) affichent un score plus faible, ainsi que les Etats-Unis, dont l'indice est légèrement inférieur à celui de la France.

Pour élaborer cet indice, le *World Justice Project* se fonde sur sept critères, dont quatre sont en lien avec le coût social des litiges tel que nous l'abordons dans cette thèse (Figure 13) : la possibilité pour les justiciables d'accéder à la justice à un coût abordable ("Costs"), les délais judiciaires ("Delays"), l'accessibilité et l'effectivité des Modes Alternatifs de Résolution des Litiges ("ADRs [25]") ainsi que le respect des décisions judiciaires ("Enforcement") [26]. La France obtient son score le plus élevé pour l'effectivité et l'accessibilité aux MARL (0,75), et son score est un peu plus faible pour ce qui est du respect des décisions judiciaires (0,71). Les résultats les plus faibles concernent le coût de la justice (0,62) et les délais judiciaires (0,59).

On observe des différences assez notables entre les pays européens (Figure 13). La justice civile allemande apparaît comme plus performante que celle de la France. La Belgique a une situation assez comparable à celle de la France, avec des performances légèrement

25. ADR signifie *Alternative Dispute Resolution* (*Modes Alternatifs de Résolution des Litiges* en français).

26. Nous mettons de côté les trois autres critères qui sont l'existence de discrimination, de corruption et d'influence gouvernementale.

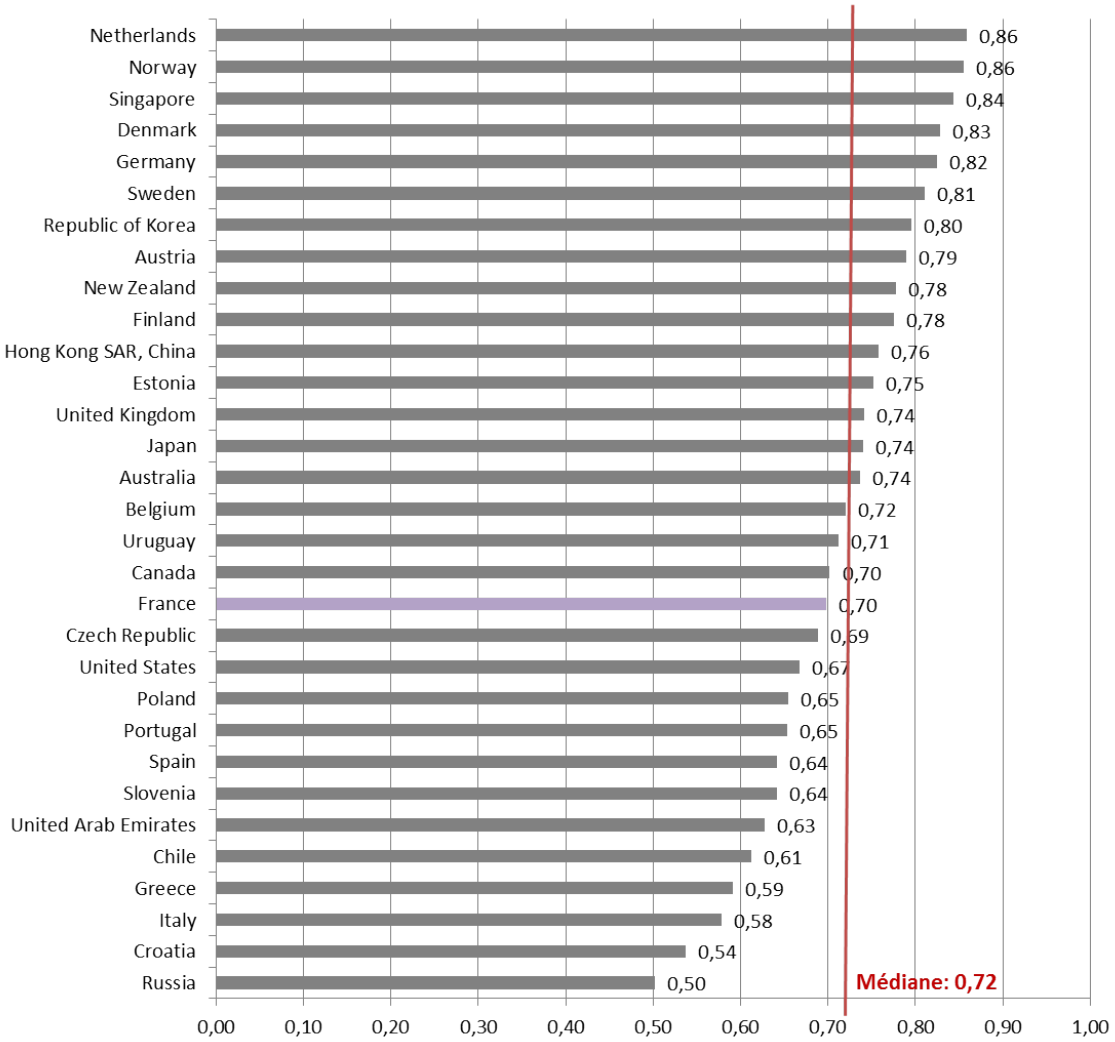


FIGURE 12 – La qualité de la justice civile dans les pays à haut revenu (WJP)

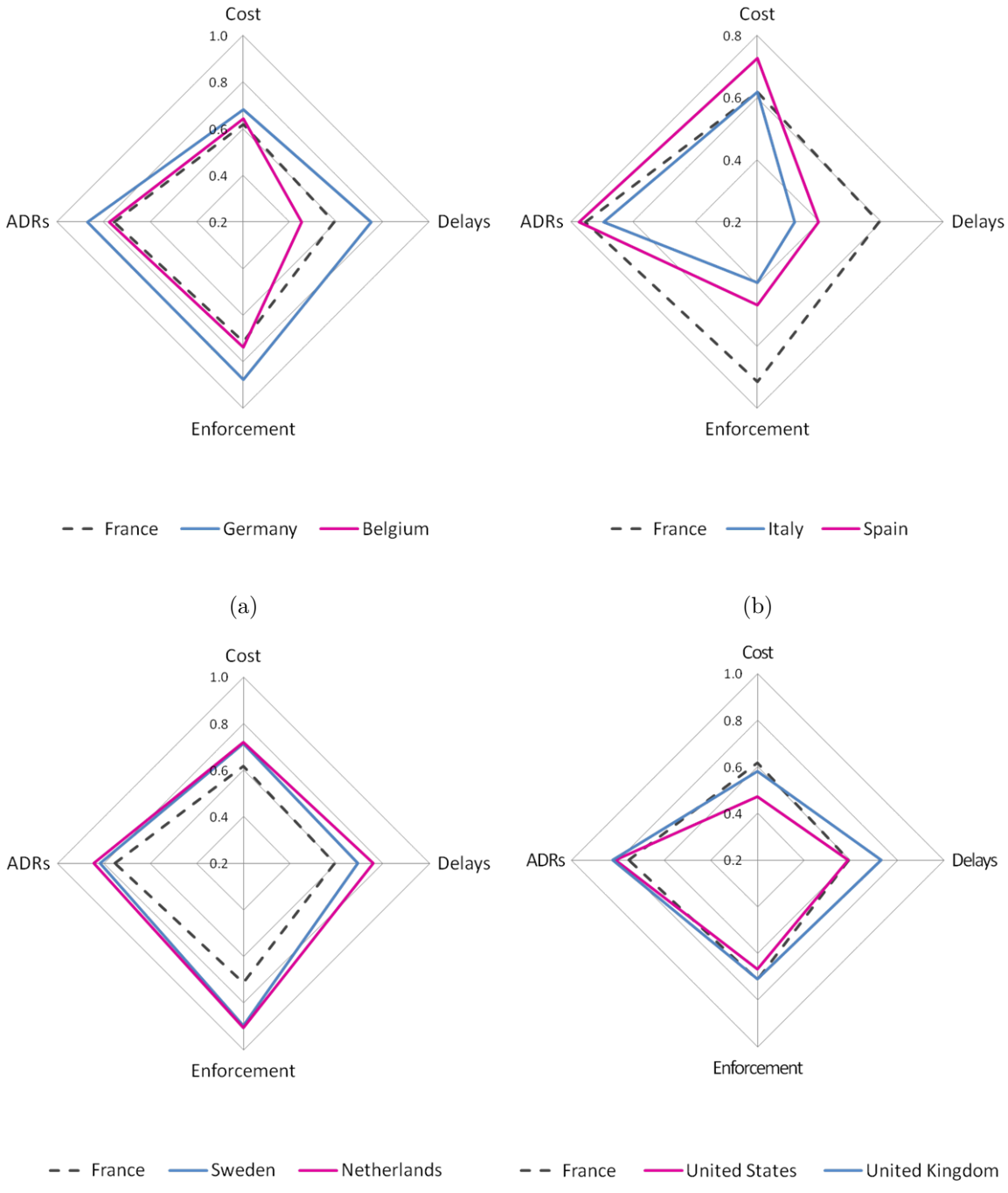


FIGURE 13 – Comparaison des scores détaillés (WJP)

supérieures, excepté pour les délais (Figure 13 (a)). L'Espagne et l'Italie affichent des profils assez similaires (Figure 13 (b)) bien que le système judiciaire espagnol apparaisse globalement comme plus performant. D'après cette étude, ces deux pays ont des difficultés assez fortes pour répondre à la demande de justice dans des délais raisonnables et à faire respecter les décisions de justice. Les Pays-Bas et la Suède obtiennent de meilleurs résultats que la France (Figure 13 (c)).

Bien que la Grande-Bretagne et les Etats-Unis s'inscrivent dans la tradition de *common law*, les problématiques auxquels ces pays sont confrontés semblent relativement proches de celles de la France, puisque les scores obtenus sont assez comparables (Figure 13 (d)). Pour ce qui est de l'accès à la justice, la France semble plutôt bien placée, avec un score de 0,62 alors qu'il est de 0,58 en Angleterre et de 0,47 aux Etats-Unis. A l'inverse, la France arrive en dernière position pour ce qui est des MARL (0,75) qui semblent être davantage utilisés dans les pays anglo-saxons, avec un score de 0,82 en Angleterre et de 0,81 aux Etats-Unis. Pour les autres critères, les scores sont relativement proches. Pour les délais par exemple, la France obtient le même score que les Etats-Unis (0,59).

Les données du programme *Doing Business* permettent de compléter cet aperçu général du fonctionnement de la justice civile. Lancé en 2002 par la Banque Mondiale, ce programme a pour ambition d'évaluer la réglementation des affaires et son application dans 189 pays. Plusieurs indicateurs ont été élaborés afin de comparer les pays dans des domaines variés comme la création d'entreprise, la facilité d'obtenir des prêts, de faire du commerce, ou encore l'importance des taxes. Les indicateurs sont calculés à partir de données subjectives puisqu'elles sont issues d'enquêtes réalisées auprès de professionnels. Nous nous intéressons à deux thématiques liées au fonctionnement de la justice civile :

l'exécution des contrats et le règlement de l'insolvabilité.

La Figure 14 représente le coût et le délai nécessaire afin de faire exécuter un contrat dans certains pays de l'OCDE [27]. La France affiche un coût plutôt modéré (évalué à 17,4 % du montant de la demande), situé sous la moyenne des pays de l'OCDE (21,1 %). On observe un coût particulièrement élevé dans les pays anglo-saxons, tout particulièrement au Royaume-Uni (43,9 %) et dans une moindre mesure aux Etats-Unis (30,5 %). La France est assez bien placée également pour ce qui est de la durée des procédures nécessaires pour faire appliquer un contrat. Celle-ci est évaluée à 395 jours civils, ce qui est inférieur à la moyenne des pays de l'OCDE (538 jours). Cette moyenne élevée s'explique par des délais très longs affichés par certains pays (plus de 1 000 jours en Grèce et en Italie). Enfin, les délais d'exécution d'un contrat apparaissent plus élevés au Royaume-Uni (437 jours), aux Etats-Unis (420 jours) et en Allemagne (429 jours) qu'en France.

La Figure 15 représente les résultats du programme *Doing Business* quant au coût et au délai qu'implique le règlement de l'insolvabilité. La France est dans la moyenne pour ce qui est du coût de cette procédure, évalué à 9 % de la valeur du patrimoine débiteur. Le coût est moindre dans plusieurs pays anglo-saxons (Etats-Unis, Canada et Royaume-Uni), mais également chez certains de nos voisins européens (Suisse, Belgique, Pays-Bas, Allemagne). Certains pays d'Europe continentale affichent au contraire un coût très important, comme l'Italie. Quant aux délais, ils sont plutôt élevés en France (1,9 année civile) alors que le délai moyen est de 1,7 année civile dans les pays de l'OCDE. Certains pays affichent des délais plus élevés, comme la Grèce (3,5 années civiles) ainsi que la Pologne et la Suisse (3 années civiles).

27. Seule une sélection de pays de l'OCDE est représentée sur la Figure 14. Cependant, la moyenne de l'OCDE, fournie par les statistiques du programme *Doing Business*, concerne l'ensemble des pays de l'OCDE.

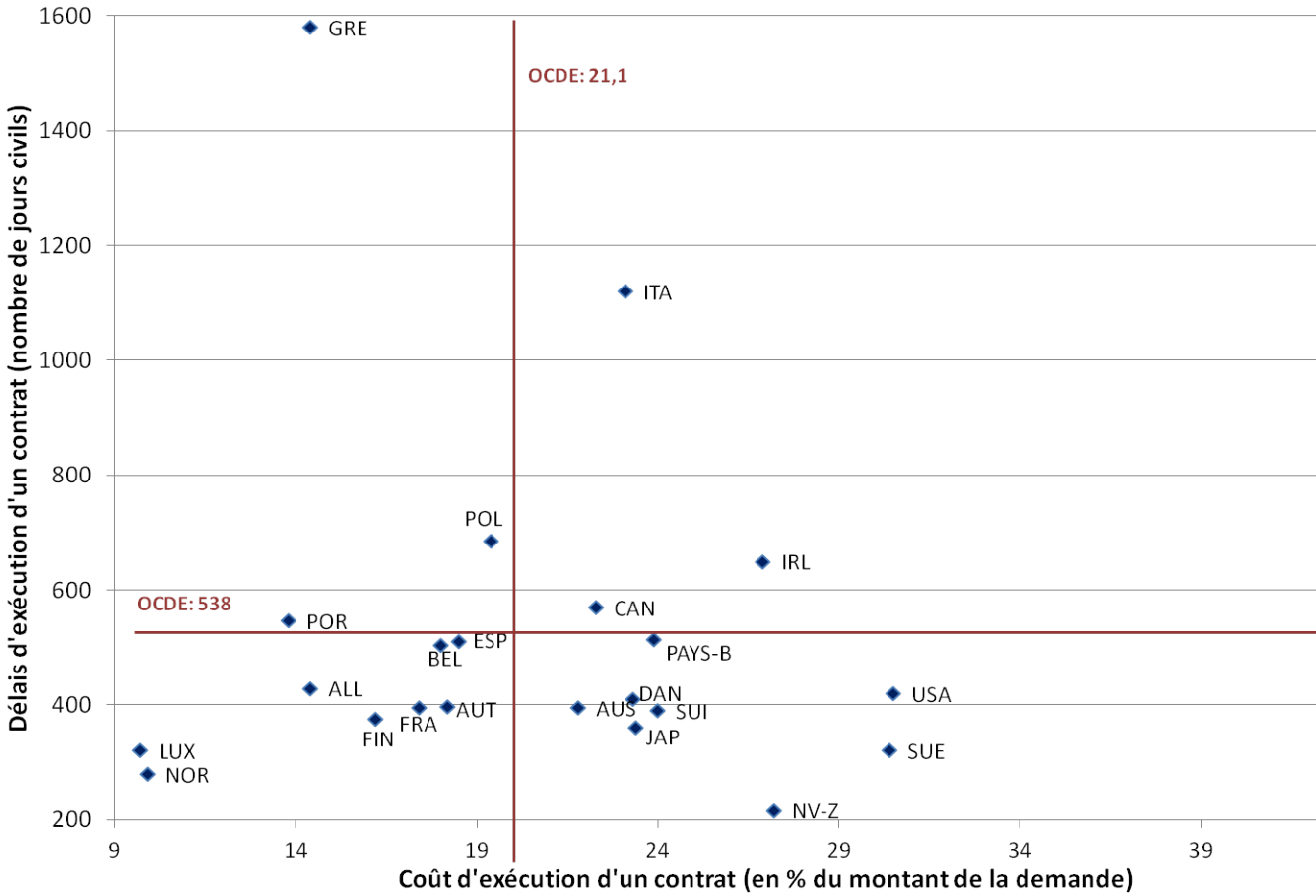


FIGURE 14 – Coût et délai d'exécution des contrats (*Doing Business*)

Comparaisons avec les pays anglo-saxons

Chaque année, le *Court Statistics Project* (CSP) [28] publie des données sur les tribunaux d'Etat américains (NCSC, 2015a). Le dernier rapport met en évidence une baisse du nombre d'affaires nouvelles de 6 % entre 2004 et 2014 [29], ce qui correspond à une baisse de 13 %

28. `http://www.courtstatistics.org/`
29. Ce chiffre inclut les affaires pénales traitées par les *state courts*.

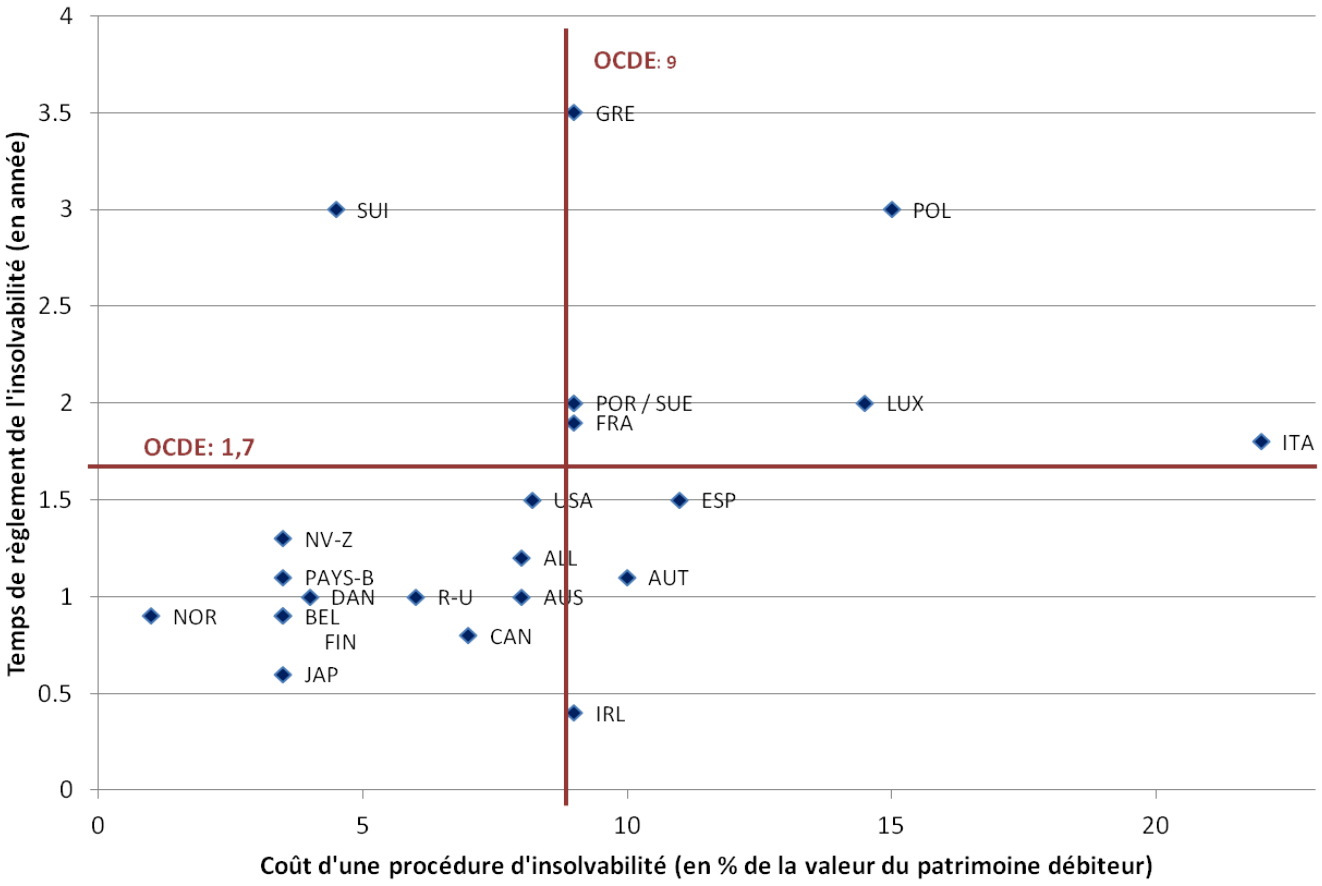


FIGURE 15 – Coût et délai du règlement de l'insolvabilité (*Doing Business*)

lorsqu'on rapporte ce chiffre à la population. De plus, on constate une dispersion assez importante selon les Etats (Figure 16) [30]. Sur les 45 Etats pour lesquels les données sont disponibles, la moitié ont eu à traiter plus de 4 341 nouvelles affaires civiles pour 100 000 habitants en 2014.

Pour comparer la propension à aller en justice aux Etats-Unis et en France, nous estimons le nombre d'affaires civiles nouvelles dans ces deux pays en 2014 devant les juri-

30. La Figure 16 tient compte de l'ensemble des affaires civiles hors affaires familiales.

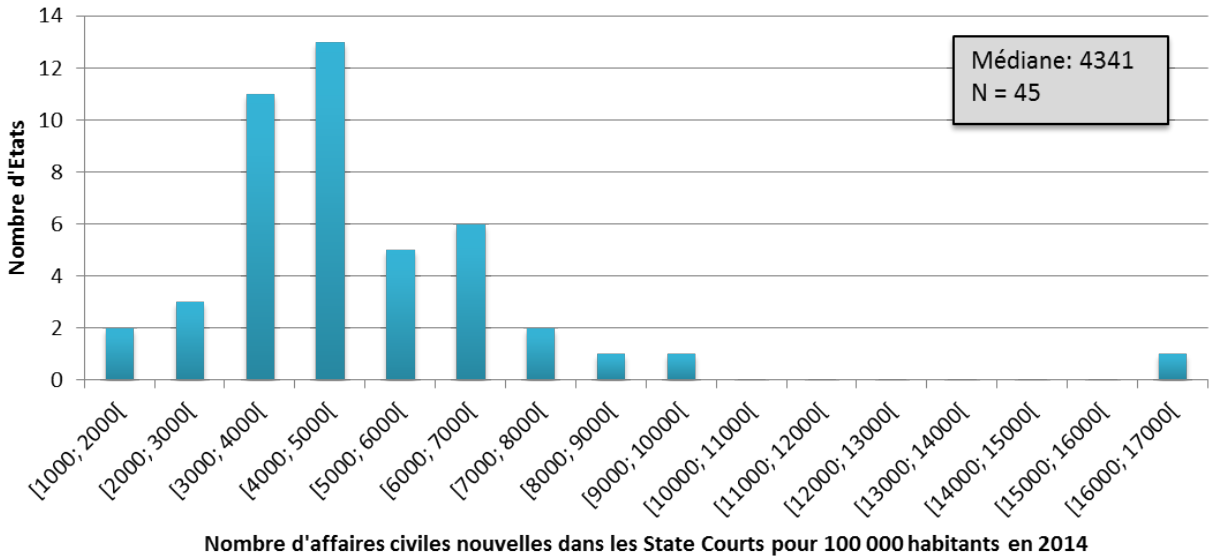


FIGURE 16 – Nombre d'affaires civiles nouvelles dans les tribunaux d'Etat américains

dictions de première instance (Table 3) [31]. Aux Etats-Unis, les affaires civiles sont traitées en première instance par les *Trial Courts* qui sont des tribunaux d'Etat (*state courts*), mais également par les *district courts* et les *Bankruptcy Courts*, qui sont saisis en cas de violation d'une loi fédérale. En France, il faut également tenir compte de plusieurs juridictions civiles, spécialisées et de droit commun. Au total, il y a environ 7 900 affaires civiles nouvelles pour 100 000 habitants aux Etats-Unis, et seulement 3 800 en France, soit une propension à aller en justice plus de deux fois supérieure aux Etats-Unis qu'en France.

31. Le nombre (arrondi) d'affaires nouvelles dans les *state courts* figure dans le dernier rapport publié par le *Court Statistics Project* (2015).
32. Source : Examining the work of State Courts, An overview of 2013 State Court caseload, Court Statistics Project, National Center for State Courts.
33. Source : *Federal Judicial Caseload Statistics 2013*, `http://www.uscourts.gov/`.
34. Au 1er janvier. Source : *United States Census Bureau*.
35. Source : Les chiffres clé de la justice, 2014.
36. Hors compétence commerciale.
37. Assistance éducative.

		Nombre d'affaires nouvelles
Etats-Unis	**State Courts** [32]	22 100 000
	Trial Courts - Civil matters	16 900 000
	Trial Courts - Domestic Relations	5 220 000
	Federal Courts [33]	1 442 274
	District Courts	271 950
	Bankruptcy Courts	1 170 324
	Nombre total d'affaires nouvelles	24 984 549
	Population résidente [34]	315 388 533
	Nombre d'affaires nouvelles pour 100 000 **habitants**	7 922
France	Juridictions civiles et commerciales [35]	2 496 776
	Tribunaux de Grande instance [36]	945 628
	Tribunaux d'instance	717 379
	Juge des enfants [37]	341 332
	Juridictions commerciales	189 503
	Tribunaux des affaires de sécurité sociale	97 286
	Conseils de Prud'hommes	205 648
	Nombre total d'affaires nouvelles	2 496 776
	Population résidente [38]	65 565 000
	Nombre d'affaires nouvelles pour 100 000 **habitants**	3 808

TABLE 3 – Nombre d'affaires civiles nouvelles en France et aux Etats-Unis en 2013

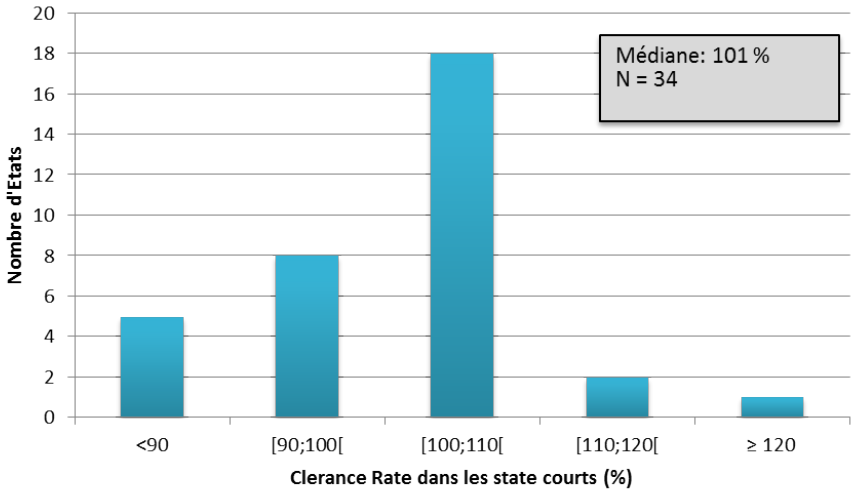


FIGURE 17 – Le *clearance rate* des tribunaux d'Etat américains (CSP)

Le *clearance rate* est également calculé par le *Court Statistics Project* pour les tribunaux d'Etat américains (Figure 17). Sur les 35 Etats pour lesquels les données sont disponibles, la majorité des Etats (21/35) affichent des taux supérieurs à 100 % [39].

Aux Etats-Unis, des données sur les délais judiciaires sont disponibles pour les tribunaux fédéraux, dans les tables du rapport *Judicial Business* paru chaque année. Nous nous intéressons ainsi à la durée des affaires civiles dans les 94 *district courts*, qui sont les tribunaux fédéraux de droit commun [40]. La durée médiane des affaires terminées entre le 1er octobre 2014 et le 30 septembre 2015 est de 8,8 mois. Il est important de noter que cette durée est très largement dépendante de la fin de l'affaire (Figure 18). Ainsi, la durée médiane est de 5,3 mois pour les affaires qui ne sont pas jugées. Si une décision judiciaire clôt la procédure avant la phase préalable au procès, la durée médiane passe à 8,9 mois. Si l'affaire se termine pendant la phase préalable au procès, ou avant le jugement, la durée est

38. Source : INSEE.
39. Les données de la Figure 17 ne tiennent pas compte des affaires familiales.
40. Source : `http://www.uscourts.gov/statistics-reports/judicial-business-2015`, table C5.

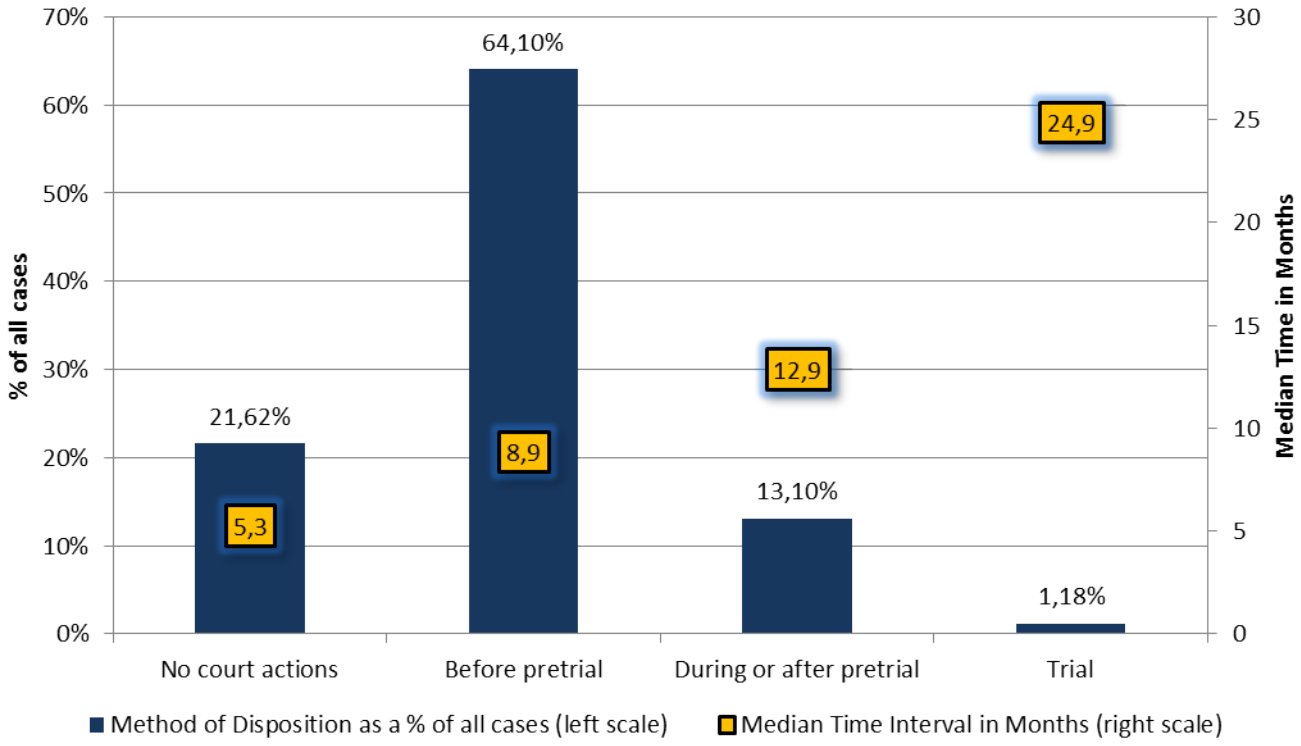


FIGURE 18 – Durée médiane des affaires et fin des affaires dans les *district courts*

de 12,9 mois. Enfin, en cas de procès, la durée médiane est très élevée puisqu'elle dépasse les 2 ans (24,9 mois). Le coût social lié aux délais judiciaires est considérablement réduit du fait que l'immense majorité des affaires (98,82 %) se termine avant le procès, et que la majorité des affaires (85,72 %) se termine avant même le début de la procédure préalable au procès.

Pour ce qui est des frais d'avocat et d'expertise, il y a peu de sources statistiques permettant de faire des comparaisons entre les pays. Tillinghast (2005) [41] évalue le coût des litiges en responsabilité à 247 milliards de dollars aux Etats-Unis en 2006, soit deux

41. cité par Landeo et al. (2013).

fois plus (en % du PIB) qu'en Allemagne et trois fois plus qu'en France et en Grande-Bretagne. De manière plus générale, la question du coût des litiges est beaucoup plus discutée dans les pays anglo-saxons qu'en France, et plusieurs rapports (qui ont donné lieu à des réformes) font état d'un accroissement de ces coûts. En Angleterre et au Pays de Galle, selon le rapport Jackson (2009), "*There is no doubt that litigation over costs has increased dramatically in recent years*". D'après ce rapport, les frais de procédure permettent aux tribunaux civils de s'autofinancer à 80 % et représentent environ 650 millions de livres par an. Les frais de procédure ('court fees') dépendent généralement de l'enjeu du litige comme c'est le cas dans les *county courts* qui traitent les affaires civiles en première instance (Table 4) [42]. Pour mesurer l'évolution du coût privé des contentieux, le rapport Jackson (2009) se fonde sur une étude du *Supreme Court Costs Office (SCCO)* qui a démontré que les frais de procédure ont augmenté plus vite que l'inflation entre 1999 et 2009 (Figure 19) [43]. L'augmentation des coûts est notable et concerne tous les types de contentieux « typiques » pris en compte dans cette étude. Pour ce qui concerne les frais d'avocat, le rapport Jackson montre que la rémunération des avocats a eu tendance à augmenter entre 2003 et 2007 (Table 5) [44].

Aux Etats-Unis, la *Duke conference* s'est tenue en mai 2010 à la *Duke University School*

42. `https://www.gov.uk/government/publications/fees-for-civil-and-family-courts/court-fees-for-the-high-court-county-court-and-family-court`

43. La Figure 19 est intitulée "Total court fees payable for each of the typical claims" dans le rapport Jackson. "PI" signifie "personal injuries".

44. Ces chiffres sont extraits du rapport Jackson. D'après ce rapport : "*The 'magic circle' of solicitors' firms is widely understood to refer to Clifford Chance, Slaughter & May, Allen & Overy, Freshfields and Linklaters. Some commentators also include Herbert Smith in this group.'City firms' refers to other large commercial firms operating principally from the City of London. 'National' firms are those large firms whose operations are not solely or primarily focused in London.*"

Claim amount	Court issued fee
Up to £300	£35
£300 to £500	£50
£500 to £1,000	£70
£1,000 to £1,500	£80
£1,500 to £3,000	£115
£3,000 to £5,000	£205
£5,000 to £10,000	£455
£10,000 to £15,000	5% of the claim
£15,000 to £50,000	5% of the claim
£50,000 to £100,000	5% of the claim
£100,000 to £200,000	5% of the claim
Over £200,000	£10,000

TABLE 4 – Les frais de procédure dans les *county courts*

in £s	Magic Circle partner	City Firm Patner	National firm Partner
2003 hourly rate	375 -450	325-375	185-250
2007 hourly rate	625-700	400-495	350-375

TABLE 5 – La rémunération des avocats en Angleterre et au Pays de Galle

of Law sur le coût des litiges civils, rassemblant de nombreux chercheurs et praticiens du droit, en vue de faire un diagnostic et de proposer des solutions face aux dysfonctionnements de la justice civile. Dans ce contexte, plusieurs éléments empiriques ont été apportés pour démontrer l'augmentation forte des coûts de litige, particulièrement pendant la procédure de *discovery*[45]. Une étude, intitulée "Litigation Costs of Major Companies" (2010) et réalisée par plusieurs organisations[46], fournit quelques statistiques quant aux coûts de litiges supportés par les grandes entreprises entre 2000 et 2008. Les résultats de cette étude

45. La documentation est disponible à cette page : `http://www.uscourts.gov/rules-policies/records-and-archives-rules-committees/special-projects-rules-committees/2010-civil`

46. *U.S. Chamber Institute for Legal Reform*, *Civil Justice Reform Group* et *Lawyers for civil Justice* (LCJ, 2010).

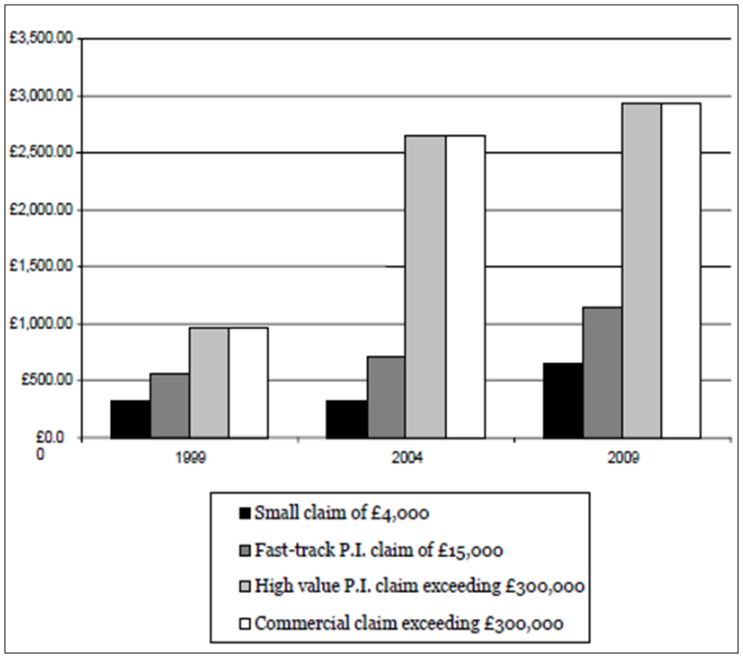


FIGURE 19 – Evolution des coûts de procédures dans les *county courts* (Rapport Jackson)

sont fondés sur une enquête réalisée en 2009 auprès des 200 plus grandes entreprises américaines ("*Fortune 200 companies*") à laquelle ont répondu 36 entreprises. En moyenne, chaque entreprise de l'échantillon a supporté un coût de litiges de 115 millions de dollars en 2008, auquel s'ajoutent les dépenses internes aux entreprises (environ 18 millions de dollars). Cette étude montre que les coûts externes des litiges, évalués à 66 millions de dollars en 2000, ont augmenté chaque année de 9 % en moyenne. En outre, les auteurs de cette étude montrent que le coût des litiges portés devant les juridictions américaines et exprimé en % du chiffre d'affaires réalisé aux Etats-Unis est entre 4 et 9 fois supérieur au coût des litiges portés devant les juridictions étrangères (en % du chiffre d'affaires réalisé à l'étranger). Enfin, l'étude montre que les coûts liés à la *discovery* constituent une part significative des coûts externes de litige.

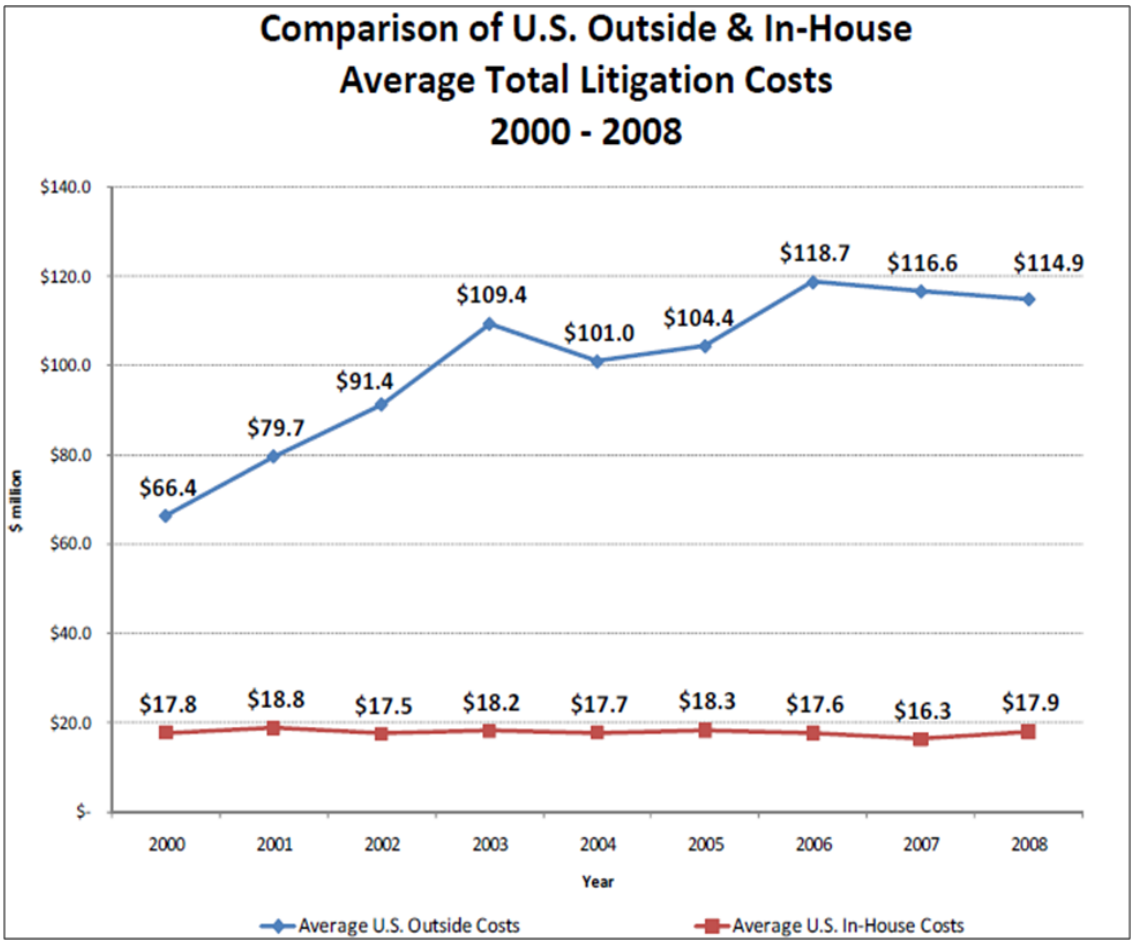


FIGURE 20 – Résultat de l'étude "*Litigation Costs of Major Companies*" (2010)

Comparaisons avec les autres pays européens

La Commission Européenne pour l'Efficacité de la Justice (CEPEJ) produit tous les deux ans un rapport qui compare l'efficacité des procédures civiles dans les 47 Etats membres du Conseil de l'Europe et qui fournit des données intéressantes quant au volume des litiges. La Figure 21 représente le nombre d'affaires nouvelles en 2012 rapporté au nombre d'habitants pour trois types de contentieux : le contentieux du divorce, du li-

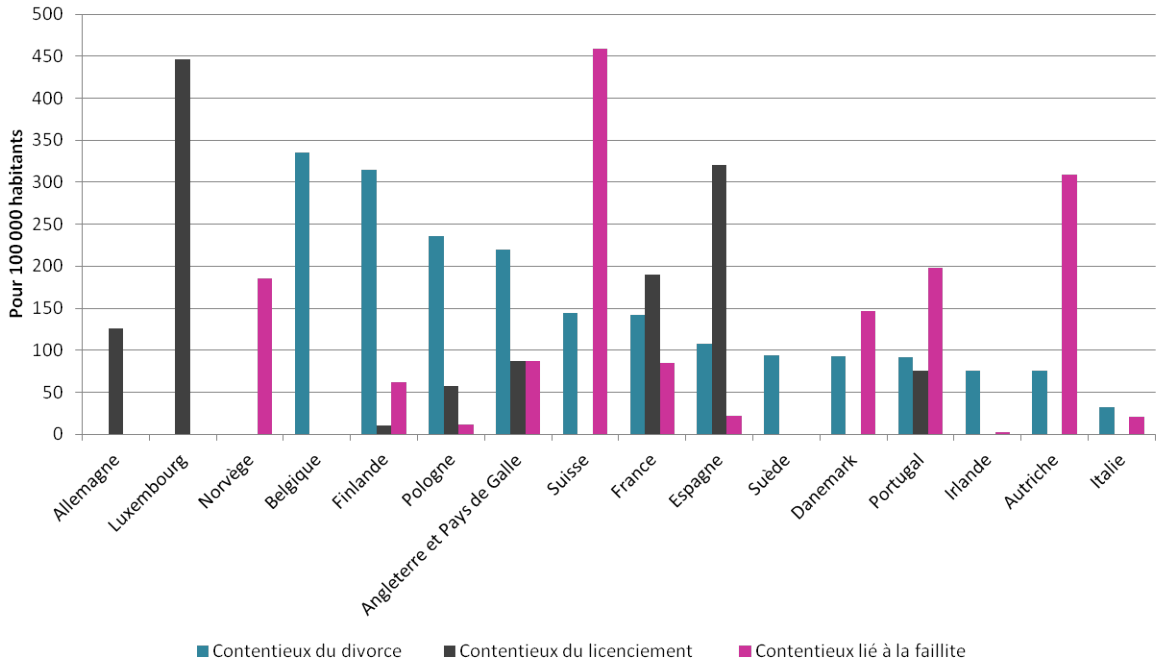


FIGURE 21 – Nombre d'affaires nouvelles en Europe en 2012 (CEPEJ)

cenciement et des faillites [47]. Un nombre assez élevé de licenciements est contesté en France puisqu'il y a environ 190 nouvelles affaires pour 100 000 habitants, contre 126 en Allemagne et 87 en Angleterre et au Pays de Galles. Le contentieux du divorce est moins volumineux avec 142 nouvelles affaires pour 100 000 habitants. Certains pays affichent un nombre plus élevé d'affaires, notamment la Belgique (336) et la Finlande (315) dont le nombre d'affaires nouvelles est plus de deux fois supérieur à celui de la France. Le contentieux du divorce est en revanche plus contenu en Italie (32 nouvelles affaires pour 100 000 habitants), en Autriche (75), en Irlande (76) et au Portugal (92). Enfin, il y a en France 85 nouvelles affaires pour 100 000 habitants en 2012, ce qui est très faible par rapport à la Suisse (459) ou l'Autriche (309) mais beaucoup plus élevé qu'en Irlande (2,5) ou en Pologne (12).

La CEPEJ fournit des données quant au *clearance rate* des pays européens pour l'en-

47. Seuls les pays pour lesquels les données sont disponibles sont reportés.

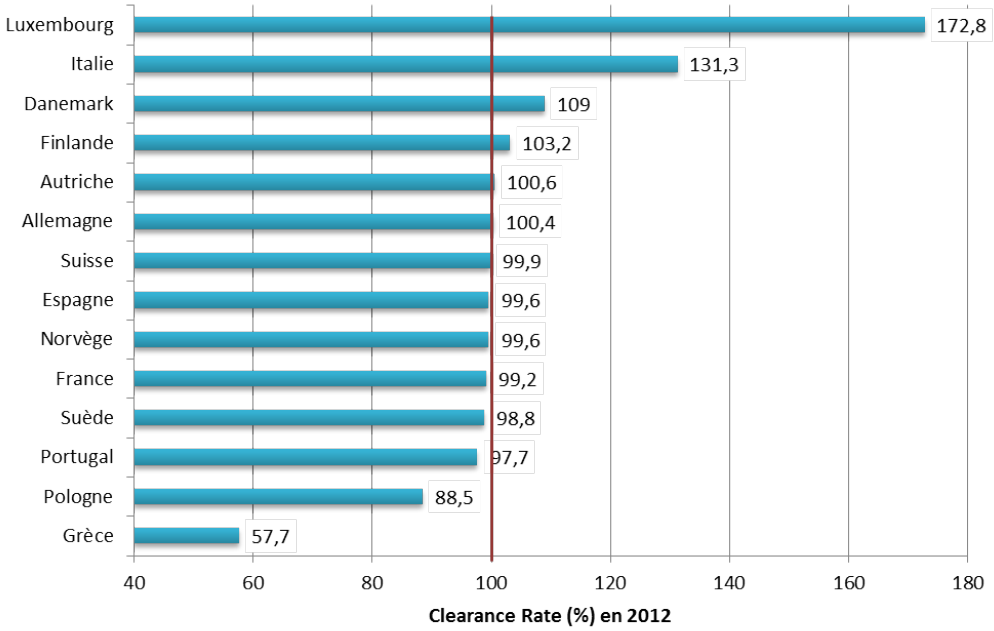


FIGURE 22 – Le *clearance rate* en 2012 pour les contentieux civils et commerciaux (CEPEJ)

semble des affaires civiles et commerciales contentieuses (Figure 22). Il est évalué à 99,2 % en France en 2012, ce qui est comparable au taux des autres pays, généralement proche de 100 %.

Les données de la CEPEJ permettent également de comparer les pays européens du point de vue des délais judiciaires. La durée moyenne des procédures est évaluée pour le contentieux du licenciement, le contentieux du divorce et le contentieux de l'insolvabilité. Bien que les données ne soient pas disponibles pour de nombreux pays, on observe que la France affiche des délais assez longs par rapport à ses voisins européens. En matière de licenciement, la durée moyenne des procédures françaises est la plus longue parmi les pays étudiés (543 jours). Elle est seulement de 273 jours en Angleterre et au Pays de Galles, de 143 jours en Espagne et de 49 jours aux Pays-Bas. Pour ce qui est des procédures de divorce contentieuses, la durée moyenne est de 636 jours en France. Seule l'Italie affiche

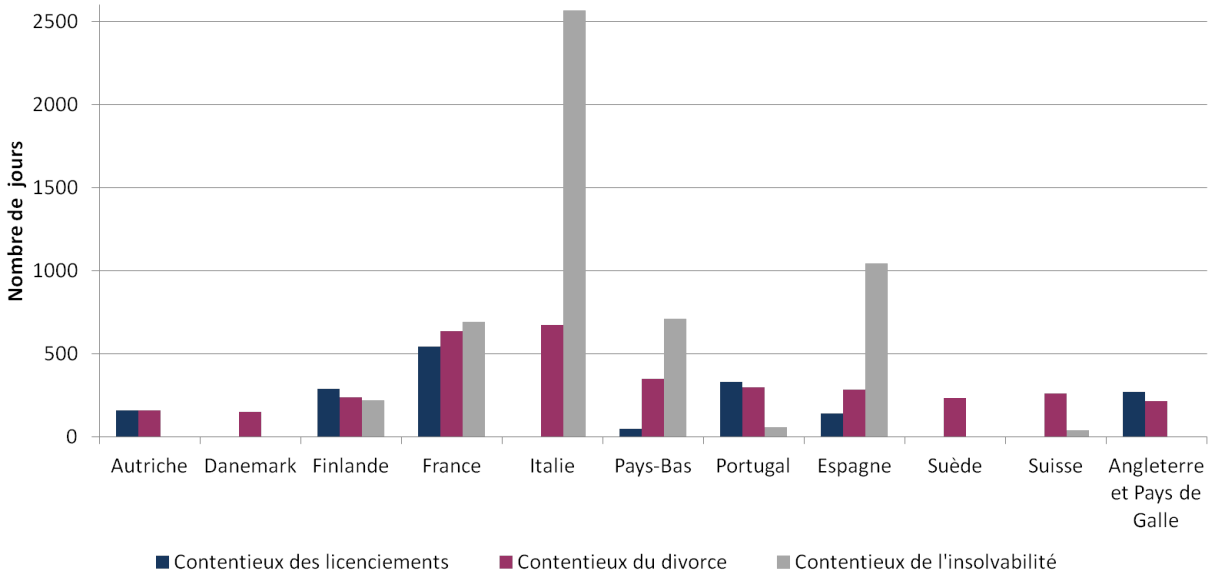


FIGURE 23 – Durée moyenne des procédures en 2012 en Europe (CEPEJ)

une durée supérieure (676 jours) alors que la durée est inférieure à 350 jours dans tous les autres pays étudiés. Pour le contentieux de l'insolvabilité, de nombreuses données sont manquantes, mais on observe une grande variabilité des durées, qui s'étalent entre 38 jours en Suisse et 2 566 jours en Italie. En France, la durée moyenne est de 690 jours. Cela semble particulièrement élevé, notamment au regard des autres types de contentieux. Cependant, la grande variabilité des données et le nombre de données manquantes rend difficile l'interprétation de ce chiffre.

Enfin, nous reportons des données de la CEPEJ concernant le montant de l'aide judiciaire accordée et le nombre de bénéficiaires pour 100 000 habitants (Figure 24) [48]. Le montant moyen de l'aide par affaire est de 337 euros en France. De nombreux pays européens proposent des montants plus élevés, comme l'Italie (803 euros), l'Allemagne (434 euros) et l'Irlande (1 373 euros). De plus, environ 1 400 affaires sont éligibles à l'aide ju-

48. Seule l'aide judiciaire pour les affaires portées devant les tribunaux est reportée ici.

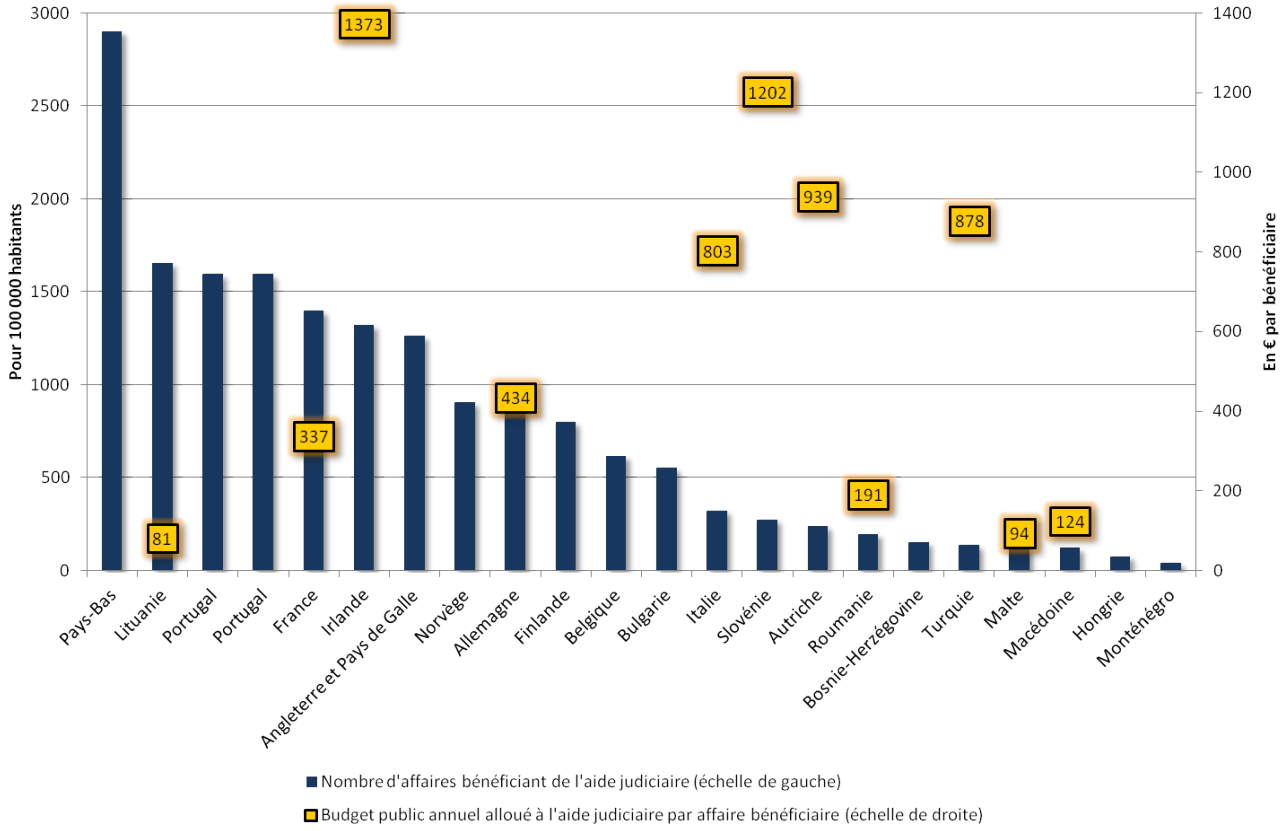


FIGURE 24 – L'aide judiciaire en Europe en 2012 (CEPEJ)

diciaire pour 100 000 habitants. C'est plus qu'en Italie (320), Belgique (615), Allemagne (891) et Angleterre (1 263), mais moins qu'aux Pays-Bas qui arrivent premier du classement (2 900). La France apparaît donc comme un pays assez généreux du point de vue du nombre de bénéficiaires à l'aide judiciaire.

Le mécanisme de l'aide judiciaire est un déterminant important des frais de justice, mais n'est pas suffisant pour évaluer l'accessibilité à la justice. Certains justiciables non éligibles à l'aide judiciaire (ou seulement éligibles à l'aide partielle) peuvent en effet être réticents à aller en justice pour des raisons budgétaires. Ainsi, il est nécessaire de comparer les pays également du point de vue du montant des frais de procédure, d'avocat

et d'expertise payés par les justiciables. Pour les frais de procédure, la France fait figure d'exception (avec le Luxembourg) en permettant aux justiciables d'initier gratuitement une action en justice. Plus généralement, dans l'Union Européenne, les frais de procédure « sont rarement un obstacle à la possibilité pour un justiciable de présenter sa demande en justice », d'après l'étude sur la transparence des coûts des procédures judiciaires civiles dans l'UE (2007), puisqu'ils ne dépassent qu'exceptionnellement les 500 euros. Davantage de donneées seraient nécéssaires pour appréhender plus globalement le coût des litiges en Europe.

2 Les règles de procédure civile

L'objet de la procédure civile est de « déterminer les règles d'organisation de la procédure judiciaire, de compétence, d'instruction des procès et d'exécution des décisions particulières aux tribunaux d'ordre civils » (Cornu, 2004). En France, ces règles sont notamment contenues dans le Code de Procédure Civile, qui a été profondément réformé en 1975 sous l'impulsion du Garde des Sceaux Jean Foyer. Ce nouveau code, élaboré notamment par Henri Motulsky et Gérard Cornu, a posé les principes directeurs du procès qui restent aujourd'hui les piliers de la procédure civile. Notre analyse porte plus largement sur l'ensemble des règles procédurales qui s'appliquent dans les litiges civils, ce qui inclut les normes en vigueur dans des juridictions spécialisées comme les Conseils de Prud'hommes ou les Tribunaux de commerce.

De par leur nature, les règles procédurales sont un facteur déterminant du fonctionnement de la justice civile. Ainsi, une modification des règles de procédure civile est susceptible de réduire le coût social des contentieux de manière directe. Par exemple, une utilisation judicieuse des nouvelles technologies peut conduire à une réduction des délais

judiciaires. La procédure civile est également un instrument de régulation du comportement des justiciables. En effet, les normes procédurales déterminent le cadre d'action dans lequel interagissent les parties, et conditionnent de ce fait leurs comportements tout au long de la procédure judiciaire. De manière indirecte, la procédure civile peut donc permettre à la puissance publique de réguler le coût social des contentieux.

Le coût social des contentieux est un enjeu majeur de la procédure civile dans les pays développés (Section 2.1). En effet, de nombreuses réformes des procédures civiles mises en œuvre en France, et plus largement dans les pays développés, visent à contenir ce coût. Pour illustrer notre propos, nous mettons en avant quelques-unes de ces réformes en France, en Grande-Bretagne et aux Etats-Unis. Les travaux de la thèse sont consacrés plus précisèment à l'impact comparé des règles de preuve sur le coût social des contentieux. Nous définissons ensuite les règles de preuve dans la Section 2.2, avant de justifier l'intérêt d'une démarche comparée dans la Section 2.3.

2.1 Les enjeux de la procédure civile

Dans cette partie, nous définissons les enjeux normatifs des règles de preuve tels qu'ils sont étudiés dans la littérature en économie du droit. Nous montrons ensuite que la question du coût des contentieux est au cœur des réformes des procédures civiles menées dans les pays développés.

Les enjeux de la procédure civile dans la littérature en économie du droit

L'approche économique fournit un cadre conceptuel normatif à travers la notion de bien-être social (*welfare*). Pour résumer, on peut considérer que les règles de procédure

civile doivent minimiser un coût social, qui se divise en trois parties : le coût du non-respect de la loi, le coût des contentieux et le coût des erreurs judiciaires. Le premier objectif du planificateur social est de minimiser les conséquences négatives du non-respect de la loi, ce que Calabresi (1970) nomme le « coût des accidents » en matière de droit de la responsabilité civile. Il s'agit d'inciter les justiciables à respecter les règles de droit substantiel et ainsi de rendre leur application effective. Pour cela, l'institution judiciaire doit responsabiliser les agents économiques en leur faisant payer le coût de leurs comportements illégaux, c'est-à-dire en les obligeant à réparer le préjudice qu'ils ont causé. Cet objectif de prévention doit être considéré à une échelle plus large que celle d'un seul contentieux. En effet, chaque nouvelle action en justice envoie un signal aux citoyens sur la capacité du système judiciaire à les sanctionner s'ils commettent des actes délictueux. L'institution judiciaire génère donc un bénéfice social car elle participe à l'accroissement de la prévention à l'échelle de la société (Shavell, 1997).

Cependant, une politique de prévention excessive peut avoir des effets pervers car elle incite les agents économiques à adapter leurs comportements pour éviter d'éventuelles poursuites judiciaires. Le coût privé qui découle de ces stratégies d'évitement peut légitimement s'intégrer dans la fonction de bien-être social. En matière de responsabilité civile délictuelle, cela a été pris en compte très tôt par Calabresi (1970), qui considère le coût direct des accidents mais également les coûts d'évitement des accidents. Plus largement, ces stratégies d'évitement peuvent se révéler coûteuses pour la société. Ainsi, l'augmentation des primes d'assurance, en particulier dans le domaine médical, est fréquemment attribuée par les économistes du droit aux normes juridiques qui seraient excessivement favorables aux victimes (Ibbetson, 2005; Lansac and Sabouraud, 2004). Par ailleurs, les chirurgiens ou les entrepreneurs peuvent avoir tendance, pour éviter d'éventuelles poursuites judiciaires,

à réduire de manière excessive les risques qu'ils prennent. Une politique de prévention disproportionnée est également susceptible d'accroître le coût social des litiges du fait du nombre élevé de poursuites judiciaires qu'elle entraîne. Ces effets collatéraux doivent être anticipés pour qu'une politique de prévention ne s'avère pas contreproductive.

Le second objectif des règles de droit procédural est de minimiser le coût social des contentieux. Ce coût est d'abord monétaire : il inclut les dépenses publiques qui permettent le bon fonctionnement du système judiciaire, ainsi que l'ensemble des dépenses supportées par les justiciables, comme les frais de procédure, les honoraires d'avocat ou encore le coût des expertises. Le coût social des contentieux comprend également une part non-monétaire. Des délais excessifs, des décisions judiciaires imprévisibles ou non-respectées sont autant de caractéristiques qui contribuent à accroître le coût pour les justiciables d'initier une action en justice. D'un point de vue économique, la minimisation du coût social des litiges participe à la réduction des coûts de transaction et permet ainsi une meilleure allocation des ressources dans l'économie.

Finalement, la minimisation du risque d'erreur judiciaire constitue un troisième critère de bien-être social. Plus précisément, le planificateur social s'efforce de réduire le *coût* des erreurs judiciaires *i.e.* la somme des probabilités d'erreurs de type I et II pondérées par le coût social de chaque type d'erreur. Ce critère a initialement été intégré dans des articles de recherche traitant de la procédure pénale (e.g. Davis, 1994); il s'agit en effet d'un enjeu considérable en la matière [49]. En matière civile, le risque d'erreur est principalement coûteux aux travers des incitations à respecter la loi, mais il peut également être intégré comme objectif social à part entière (e.g. Demougin and Fluet, 2005). L'ampleur du coût

49. Un coupable en liberté risque de reproduire un comportement criminel qui est potentiellement très coûteux pour la société. A l'inverse, la condamnation d'un innocent est souvent considérée comme socialement inacceptable, augmentant le coût social dans des proportions considérables.

social résultant d'une erreur judiciaire est cependant moindre au civil qu'au pénal. En outre, les deux types d'erreurs ne sont pas pondérés de manière identique : alors qu'au pénal les erreurs de type I (innocent condamné) sont souvent considérées comme étant plus coûteuses que les erreurs de type II (coupable acquitté), cette hiérarchisation n'a *a priori* pas lieu d'être dans un litige civil.

Ce tour d'horizon des critères de bien-être social couramment utilisés en économie de la procédure civile a mis en exergue les différentes finalités du système judiciaire. Les règles de preuve, qui sont l'objet de nos travaux, affectent les trois critères de bien-être social évoqués ci-dessus, à travers leurs conséquences sur l'issue des contentieux. Nous étudions en particulier leur incidence sur coût social des litiges, puisque nous nous intéressons au volume des litiges (Partie 1) et au montant des dépenses judiciaires engagées par les parties (Partie 2). Cependant, le critère de minimisation du coût social des contentieux ne doit pas être considéré de manière isolée : il est le facteur déterminant l'accessibilité des citoyens à la justice et a, de ce fait, des conséquences majeures sur les incitations à respecter la loi.

Les enjeux des réformes des procédures civiles

Les pays développés font face à des difficultés pour maîtriser le coût social des contentieux, et répondre aux demandes des justiciables dans un délai raisonnable et à un coût modéré (Section 1). L'article 6-1 de la Convention Européenne des Droits de l'Homme, qui garantit le droit à un procès équitable, fait l'objet d'une jurisprudence de plus en plus importante, conduisant souvent les Etats à modifier leur droit interne [50]. Les travaux menés par la Commission Européenne pour l'Efficacité de la Justice vont également en ce sens

50. Le droit au procès équitable implique notamment un accès au juge, un jugement dans un délai raisonnable, et le droit à une justice de qualité.

puisqu'ils comparent les systèmes judiciaires du point de vue de l'efficacité et de la qualité des procédures judiciaires (CEPEJ, 2014). Ainsi, l'amélioration du fonctionnement de la justice est aujourd'hui au cœur des préoccupations politiques.

L'actualité montre qu'il s'agit en effet d'un enjeu majeur pour le législateur, puisque les exemples de réformes procédurales visant à réduire le coût social des contentieux sont multiples. En France, la loi Macron du 6 août 2015 modifie la procédure prud'homale afin de réduire les « délais de jugement et [le] taux d'appel excessivement élevé »[51]. Pour désengorger les tribunaux, les justiciables peuvent désormais recourir à une médiation conventionnelle avant la saisine du Conseil de Prud'hommes. En outre, le bureau de conciliation (devenu bureau de conciliation et d'orientation) peut orienter les affaires vers un bureau de jugement restreint.

La loi Macron réforme également les juridictions commerciales, en introduisant une nouvelle juridiction spécialisée, chargée des procédures de sauvegarde, du redressement et de la liquidation des entreprises de plus de 250 salariés. L'intention du législateur est ainsi de « renforcer la prévisibilité de la réponse judiciaire et donc, la sécurité juridique, grâce à une jurisprudence plus homogène »[52]. Il s'agit de réduire le coût privé des contentieux pour ces entreprises qui représentent des enjeux économiques et sociaux majeurs, et ainsi de rendre le territoire français plus attractif pour les investisseurs étrangers.

Dans un autre domaine, la loi Hamon du 17 mars 2014 introduit les actions de groupe dans le droit français de la consommation. Ces actions permettent à plusieurs consommateurs ayant subi le même préjudice de se regrouper. L'objectif est de répartir les coûts de procédure sur plusieurs demandeurs afin d'inciter les justiciables à faire valoir leurs droits

51. Extrait de l'exposé des motifs de la loi Macron, disponible sur le site : `https://www.legifrance.gouv.fr/`

52. Extrait de l'exposé des motifs de la loi Macron.

et de renforcer l'application effective du droit.

La nécessité d'une réforme plus globale de la procédure civile apparaît dans plusieurs rapports remis en 2013 à la garde des Sceaux afin de « bâtir la justice du XXI^{ème} siècle »[53]. Dans ces rapports, la question de la capacité de notre système judiciaire à satisfaire la demande de justice est centrale. La demande de justice est appréhendée en termes de volume mais aussi en termes qualitatif : l'accent est mis en particulier sur la complexité des procédures qui rend notre système judiciaire peu accessible. Ce constat est associé à celui d'un isolement des magistrats et d'une « perte de repères [des acteurs de la justice], qui est liée à un accroissement et à une diversification de la matière traitée et à un empilement de textes de qualité parfois médiocre et d'origines diverses [...] » (Delmas-Goyon, 2013). Ainsi, les difficultés de fonctionnement de la justice civile portent sur l'ampleur de la demande de justice, mais se situent également du côté de l'offre de justice.

Plusieurs de ces rapports mentionnent la nécessité de développer en amont du juge les Modes Alternatifs de Résolution des Litiges (Delmas-Goyon, 2013; Marshall, 2013). Le recours à des solutions négociées est préconisé depuis plusieurs années (Magendie, 2004). Le but affiché est de dé-judiciariser les contentieux afin de contenir l'office du juge et ainsi améliorer l'efficacité de la justice civile. Malgré l'institutionnalisation de la médiation par la loi du 4 février 1995, cette pratique reste relativement peu courante, et n'a pas permis de désengorger les tribunaux. D'autres propositions visent également à dé-judiciariser certains

53. Il s'agit du rapport de l'Institut des Hautes Etudes sur la Justice (IHEJ) intitulé « La prudence et l'autorité - l'office du juge au XXI^{ème} siècle » (Garapon et al., 2013), du rapport Marshall intitulé « Les juridictions du XXI^{ème} siècle - Une institution qui, en améliorant qualité et proximité s'adapte à l'attente des citoyens et aux métiers de la justice » (Marshall, 2013) et du rapport Delmas-Goyon intitulé « Les juridictions du XXI^{ème} siècle - Un citoyen acteur, une équipe de justice » (Delmas-Goyon, 2013).

aspects du droit, par exemple en octroyant davantage de pouvoirs aux greffiers. Les rapports sur la « justice du XXI^{ème} siècle » évoqués ci-dessus proposent également de nombreuses mesures pour rationaliser l'offre de justice et simplifier son fonctionnement, afin que les justiciables accèdent plus facilement à la connaissance des règles de droit procédural.

La « réforme de la justice du XXI^{ème} siècle » a été annoncée quelques mois après la remise des rapports évoqués plus haut, en septembre 2014 [54]. Composée de 15 mesures, cette réforme prévoit de simplifier quelques textes et procédures (par exemple avec la création fin 2015 du portail Portalis). Cela doit permettre de rendre la justice plus accessible et de réduire les délais de justice. Pour développer les MARL, il est question d'harmoniser l'offre de médiation, de créer un statut de médiateur et de renforcer la formation des magistrats aux mesures de conciliation. De plus, certaines compétences actuellement confiées aux juges seront transférées à des non-magistrats, comme par exemple les déclarations de PACS.

Ces mesures consistent pour la plupart à améliorer le fonctionnement interne de la justice pour la rendre plus performante. Il s'agit de proposer une offre de justice renouvellée afin que les justiciables prennent des décisions éclairées, donc meilleures du point de vue de la société. Ces réformes ne visent pas directement à réguler les comportements des justiciables à travers les incitations du système judiciaire. Cette perspective, dans laquelle s'inscrivent nos travaux, nous semble être intéressante, d'autant que « les tentatives visant à redonner à l'institution judiciaire des marges de manœuvre pour éviter l'asphyxie et pour mieux traiter ce que certains dénomment aujourd'hui le cœur de métier du juge n'ont pas permis d'atteindre cet objectif », selon le rapport Delmas-Goyon (2013).

En Angleterre et au Pays de Galle, des réformes majeures de la procédure civile ont eu

54. http://www.justice.gouv.fr/la-reforme-judiciaire-j21-12563/

lieu en 2013, et visent plus directement à modifier les comportements des justiciables. Ces réformes sont appelées "*Jackson Reforms*" en référence à Lord Justice Jackson, auteur du rapport "*Review of Civil Litigation Cost*" (2010) dont elles s'inspirent. Il s'agit du rapport le plus important sur la procédure civile anglaise depuis la publication du rapport Woolf en 1996, qui a lui-même donné lieu à des réformes significatives. Le rapport Jackson présente un état des lieux du coût des litiges en Angleterre et propose un certain nombre de mesures pour contenir l'augmentation de ce coût.

La réforme entrée en vigueur en 2013 reprend de nombreuses mesures préconisées par le rapport Jackson, dont certaines sont susceptibles de modifier profondément les incitations des parties pendant un litige. Par exemple, certaines dépenses, habituellement supportées par la partie qui perd le procès, restent désormais à la charge de la partie qui les engagent [55]. Les "*contingent fees*", qui rémunérent les avocats en proportion des dommages et intérêts perçus par le client, sont désormais autorisés. En outre, les tribunaux ont des pouvoirs supplémentaires pendant la phase préalable au procès. Ils doivent notamment veiller à ce que les coûts supportés par les parties ne soient pas disproportionnés par rapport à l'enjeu du litige.

Aux Etats-Unis, la question du volume et du coût des litiges est également très présente dans le débat public. Ces problématiques ont été mises en avant lors de la célèbre conférence *Roscoe Pound* en 1976 qui a profondément marqué le système judiciaire américain, notamment en participant au développement des MARL. Depuis 1976, de nombreuses conférences ont eu lieu sur le coût des litiges et les dérives de la *discovery*, et ces sujets

55. Il s'agit des les primes d'assurance "*after-the-event*" (souscrites une fois que le litige existe) et les "*no win, no fees agreements*". Ces derniers sont des honoraires d'avocat complémentaires et conditionnnels à une victoire. Ils se distinguent des *Contingent Fees Agreement* car le montant de la prime ne dépend pas du montant de dommages et intérêts perçu par le demandeur.

sont restés d'actualité.

La dernière conférence d'envergure sur les coûts des litiges s'est tenue à *Duke University School of Law* en mai 2010, et a été suivie une réforme des *Federal Rules of Civil Procedure* (FRCP). Un des amendements, entré en vigueur en décembre 2015, introduit la notion de proportionnalité dans la FRCP 26 qui définit l'étendue de la *discovery*. Désormais, pour entrer dans le champ d'application de la *discovery*, la requête d'un justiciable doit être "*proportional to the needs of the case, considering the importance of the issues at stake in the action, the amount in controversy, the parties' relative access to relevant information, the parties' resources, the importance of the discovery in resolving the issues, and whether the burden or expense of the proposed discovery outweighs its likely benefit.*"

Par ailleurs, la jurisprudence participe également à ce mouvement visant à limiter les abus possibles de la *discovery*. Depuis une jurisprudence de la Cour Suprême de 2007[56], un défendeur peut demander le rejet de la poursuite judiciaire si les faits allégués par le demandeur ne sont pas plausibles. Cela tend également à accroître les pouvoirs dévolus aux juges chargés de la mise en état de l'affaire.

2.2 Les règles de preuve

La thèse porte sur un type de règles procédurales qui sont les règles de preuves. Ces règles jouent un rôle majeur dans la résolution des litiges civils, car les preuves, qui visent à établir l'existence d'une situation de fait ou de droit, déterminent l'issue du litige. Cette définition inclut des éléments matériels —un contrat ou un enregistrement audio, par exemple— mais également immatériels, tels l'argumentation d'un avocat ou le témoignage d'un individu. Les magistrats disposent d'un temps limité pour juger chaque affaire en

56. Bell Atlantic Corp. v. Twombly (550 U.S.544, 570 [2007]).

s'appuyant sur ces éléments. Ils établissent ainsi une nouvelle vérité, la vérité judiciaire, et leurs décisions font autorité puisqu'en vertu de l'adage *res judicata pro veritate habetur*, la chose jugée est tenue pour vraie.

De la recherche de preuves jusqu'à la décision finale du juge, le processus probatoire est souvent long et coûteux. Des éléments (matériels) peuvent exister au moment de la survenance du litige mais ils n'acquièrent le statut d'éléments de preuve qu'à partir du moment où ils sont inclus comme pièces du dossier. En outre, de nouvelles pièces peuvent être produites à l'initiative des parties ou du juge. L'ensemble de ces pièces permet au juge du fond d'évaluer la crédibilité des parties et de trancher le litige.

De multiples règles gouvernent ce processus, parmi lesquelles nous distinguons les règles d'*administration* des règles d'*évaluation* des preuves. Les premières organisent le processus de production et de présentation des preuves alors que les secondes contraignent la décision du juge du fond. Ces deux types de normes interviennent à différentes étapes du litige. Les règles d'administration des preuves organisent la phase préalable au procès (*pre-trial phase*), alors que celles qui concernent l'évaluation des preuves n'ont d'effets que lors de la phase finale du litige (*trial phase*). En outre, dans les pays de *civil law*, ce n'est généralement pas le même magistrat qui est en charge de l'administration et de l'évaluation des preuves. En France par exemple, le Juge de la Mise en Etat (JME) contrôle l'administration des preuves et le juge du fond évalue les preuves et tranche le litige [57].

57. Ces fonctions sont généralement assurées par le même juge dans la tradition de *common law* (Hadfield, 2011).

Les règles d'administration des preuves

Les règles d'administration des preuves organisent la communication des éléments probatoires entre les parties ainsi que la production d'éléments nouveaux. Elles sont connues aux Etats-Unis sous l'appellation *discovery*. Trois acteurs sont susceptibles d'être impliqués dans le processus de découverte de preuves : le demandeur, le défendeur et le juge [58]. Les règles d'administration des preuves peuvent ainsi être étudiées sous l'angle de la délimitation des droits et obligations de chacun de ces acteurs. Tout d'abord, qui du demandeur ou du défendeur doit apporter les preuves ? Et dans quelle mesure le juge peut restreindre les marges de manœuvre des parties et intervenir dans la recherche de preuves ? Nous abordons succinctement ces questions en portant notre attention sur le cas de la France et des Etats-Unis.

La réponse à la première question renvoie à la problématique de l'allocation de la charge de production. Cette règle détermine l'identité de la partie ayant la tâche de présenter des preuves au tribunal (Bernardo et al., 2000). Elle a donné lieu à deux interprétations dans la littérature sur la charge de la preuve (cf. chapitre 3). Certains auteurs font l'hypothèse que la partie à qui la loi a attribué la charge de produire des preuves perd le procès si aucune preuve n'est présentée au juge (e.g. Hay and Spier, 1997). La seconde interprétation considère que la charge de produire des preuves réglemente le temps du procès en obligeant une des parties à soumettre les éléments qu'elle détient en premier (Talley, 2013). Dans une certaine mesure, ces deux interprétations se rejoignent car la partie qui ne supporte pas la charge de production n'a aucune incitation à présenter les éléments probatoires dont elle

58. Dans nos analyses, les parties peuvent être représentées par un avocat. Cependant, nous supposons qu'il n'y a pas de conflit d'intérêt entre les avocats et leurs clients. Certains travaux remettent en cause cette hypothèse (e.g. Rubinfeld and Scotchmer, 1993).

dispose avant son adversaire (Hay and Spier, 1997). Cependant, nous retenons par la suite la seconde définition car elle permet de capturer une caractéristique essentielle de la charge de production : celle-ci n'est pas fixée une fois pour toute mais elle est susceptible d'être transférée d'une partie à l'autre à plusieurs reprises au cours de la procédure judiciaire [59].

Dans la pratique, la charge de production incombe généralement au demandeur [60]. Par exemple, une firme ayant déposé un brevet de produit doit être en mesure de prouver l'existence d'une contrefaçon si elle intente une action en justice. Cependant, le législateur prévoit dans certaines situations un renversement de la charge de production. C'est le cas si la contrefaçon présumée porte sur un procédé *i.e.* sur un ensemble de techniques nécessaires à la production d'un bien. C'est alors au contrefacteur de démontrer que le bien qu'il commercialise a été fabriqué avec d'autres techniques que celles brevetées par son concurrent. En outre, nous analysons la charge de production lorsque le défendeur peut choisir une stratégie de défense affirmative (cf. chapitre 4). Une telle défense, qui consiste à invoquer de nouveaux faits plutôt qu'à remettre en cause ceux soulevés par le demandeur, a pour effet de renverser la charge de production sur le défendeur [61].

La question des présomptions légales est intimement liée à celle de la charge de production. Une présomption consiste pour le législateur à identifier une partie et à lui attribuer

59. De plus, la première définition induit une certaine confusion entre la charge de production de preuves et la charge de persuasion, qui intervient au moment de l'évaluation des preuves par le juge. Même si l'évaluation des preuves par le juge influence le processus de découverte des preuves, la distinction entre les règles d'administration et les règles d'évaluation des preuves nous paraît nécessaire pour capturer les spécificités de ces différentes règles.

60. En France, l'article 1315 du Code Civil stipule : « Celui qui réclame l'exécution d'une obligation doit la prouver. »

61. Cette notion est issue du droit américain fédéral et n'est pas définie en tant que telle dans le droit français. Elle s'applique cependant à de multiples situations.

la charge de produire et de présenter des preuves au juge. Nous reprenons ici la définition des présomptions légales de Talley (2013) qui écrit : *"Presumptions [...] fix initial conditions in light of the Burden of Production at various stages of trial, identifying which party must bear burden of going forward with evidence."* Par exemple, la présomption légale de validité des brevets, qui existe en France et aux Etats-Unis, implique que c'est la partie qui conteste la validité d'un brevet qui doit en apporter la preuve. Il faut noter que le concept de présomption légale reste sujet à débats dans la littérature. Selon Talley (2013), c'est le concept le plus vague ("*slippery*") en matière de règles de preuve.

La question de l'administration des preuves renvoie également à une seconde problématique, celle du pouvoir d'instruction des parties et du juge dans l'établissement des preuves. En France, ce sont les parties qui conduisent l'instance [62], et le procès est gouverné par le principe du dispositif : « les parties sont maîtresses de la partie litigieuse » (Motulsky, 1959), et il revient au juge de dire le droit. De plus, les parties sont dans l'obligation de communiquer à leur adversaire les preuves qu'elles ont en leur possession et qu'elles souhaitent faire valoir au procès. Si leur adversaire transgresse cette règle, elles peuvent solliciter le juge afin que celui-ci contraigne la partie adverse à respecter cette obligation.

Cependant, il faut observer qu'en France, la recherche d'éléments probatoires nouveaux est davantage limitée qu'aux Etats-Unis par le principe de la loyauté des preuves. Un poids

62. L'article 2 du Code de Procédure Civile français stipule : « Les parties conduisent l'instance sous les charges qui leur incombent. Il leur appartient d'accomplir les actes de la procédure dans les formes et délais requis. »

plus important est accordé au respect de la vie privée et au secret des affaires [63]. Il revient au juge de mettre en balance l'atteinte à l'un de ces principes avec l'impératif de la preuve, en procédant à un contrôle de proportionnalité [64]. La *discover*y américaine offre davantage de liberté aux justiciables que la procédure française. Les parties peuvent plus facilement obliger leur adversaire à répondre à leurs interrogations (sous serment ou par écrit) et à transmettre des copies de certains documents [65]. L'étendue de la *discovery* suscite des débats en France et plus largement en Europe, notamment quand elle a vocation à s'appliquer à des entreprises européennes impliquées dans des litiges internationaux (Adams, 1995).

Cette liberté accrue des justiciables américains dans la recherche de preuves est associée à un moindre interventionnisme du juge américain lors de la phase préalable au procès. Il peut néanmoins restreindre l'usage des mesures d'investigation initiées par les parties si leur nombre ou les coûts qu'elles induisent deviennent excessifs. La réforme des règles fédérales de procédures civiles (FRCP), qui est entrée en vigueur au 1er décembre 2015 renforce cette dimension en introduisant la notion de *proportionnalité* dans les FRCP (cf. chapitre 2). Il s'agit de limiter le volume de la *discovery* sans que le juge n'ait à se prononcer sur la

63. Le respect de la vie privée figure dans l'article 9 du Code Civil français et dans l'article 8 de la Convention Européenne des Droits de l'Homme. Le secret des affaires n'est pas défini par le droit français. Cependant, il est prévu par la loi dans certains cas particuliers (secret des correspondances des avocats, secret bancaire). En outre, selon la Cour de Cassation, les magistrats peuvent assurer la protection du secret des affaires si « dans la balance des intérêts en présence, les juges excluront l'existence d'un motif légitime à la mesure d'instruction » (Cass., 2012).

64. La notion de « proportionnalité » s'est développé suite à la décision du 15 mai 2007 de la chambre commerciale de la Cour de Cassation dans laquelle la Cour affirme dans que « toute atteinte à la vie privée n'est pas interdite, et qu'une telle atteinte peut être justifiée par l'exigence de la protection d'autres intérêts, dont celle des droits de la défense, si elle reste proportionnée au regard des intérêts antinomiques en présence. » (Mekki, 2015)

65. FRCP 30 à 34.

pertinence des expertises sur le fond. La situation est très différente en France, puisque le juge peut ordonner une mesure d'instruction à l'initiative des parties dès lors que l'issue du litige dépend des faits que la partie requérante s'efforce de prouver, et à condition que l'expertise ne s'oppose pas à certains principes fondamentaux[66]. De plus, le juge a « le pouvoir d'ordonner, même d'office, toute mesure d'instruction légalement admissible »[67].

Ainsi, même si la procédure civile française était d'essence accusatoire lorsque le premier Code de Procédure Civil a été instauré en 1806, la répartition des pouvoirs entre les parties et le juge est aujourd'hui beaucoup plus équilibrée, notamment depuis la promulgation du nouveau Code de Procédure Civile en 1975. Malgré cela, l'opposition entre une procédure qui serait inquisitoire en France et accusatoire aux Etats-Unis doit être nuancée, d'abord car la procédure française conserve de nombreuses caractéristiques accusatoires. Même si le juge peut, de sa propre initiative, ordonner des mesures d'instruction, les statistiques montrent que les expertises judiciaires sont généralement ordonnées sur requête des parties (Arnault and Krief, 2003). De plus, le pouvoir d'instruction du juge est largement restreint par le fait que cette démarche ne peut avoir pour objectif de « suppléer la carence » des parties dans l'administration de la preuve[68]. Dans la pratique, de telles mesures sont assez rares, et le juge a principalement pour rôle de "filtrer" les requêtes des parties (cf. chapitre 2). Par ailleurs, Hadfield (2011) souligne que les juges américains ont un pouvoir grandis-

66. Les parties peuvent également entreprendre des expertises extra-judiciaires. La jurisprudence leur accorde une valeur probatoire moindre que celle des expertises judiciaires (Vergès, 2012)

67. Article 10 du Code de Procédure Civile.

68. Article 146 du Code de Procédure Civile.

sant dans le processus de recherche de preuves[69]. Au final, le système français est probablement plus éloigné d'un système purement accusatoire que ne l'est le système américain, mais une analyse fine du rôle du juge est plus appropriée pour distinguer les deux systèmes.

Les règles d'évaluation des preuves

En second lieu, la thèse s'intéresse aux règles d'évaluation des preuves qui encadrent la manière dont le juge évalue les pièces qui lui sont présentées. La décision finale du juge dépend de la crédibilité globale des allégations de chaque partie. Cette crédibilité globale est elle-même fonction de la valeur probante des différents éléments qui soutiennent la position du demandeur, par comparaison à la valeur probante des pièces apportées par le défendeur. Les règles d'évaluation des preuves sont donc susceptibles d'intervenir à deux niveaux : elles peuvent fixer soit la valeur probante d'un élément donné, soit un seuil de crédibilité global nécessaire pour trancher le litige dans un sens donné.

En France, il est courant que le législateur ou la jurisprudence détermine la valeur probante d'une pièce. Il existe en matière civile un régime de "preuve légale" qui s'applique principalement lorsqu'il s'agit de démontrer l'existence d'un acte juridique, par exemple un contrat conclu préalablement au litige. Le législateur a hiérarchisé les preuves, qualifiant certaines preuves de parfaites. C'est le cas d'un aveu dont la force probante est absolue et s'impose au juge. Les écrits établis sur support papier font également partie de cette

69. *"It is conventional to identify common law courts as following an adversarial process, in which lawyers are active and judges are passive in shaping issues and collecting evidence, and civil code courts as following an inquisitorial process, in which judges are responsible for shaping issues and collecting evidence. The distinction is generally overdrawn."* (Hadfield, 2011)

catégorie (sous certaines conditions) ainsi que les écrits électroniques [70]. Par ailleurs, certaines preuves dites imparfaites ont une force probante moindre, comme par exemple un témoignage. Leur appréciation est laissée à la libre interprétation du tribunal.

La valeur probante d'un élément est parfois subordonnée à la manière dont il a été obtenu. Ainsi, la jurisprudence considère que les pièces issues d'une expertise extra-judiciaire ont une valeur moindre que celles faisant suite à une mesure d'instruction ordonnée par le juge (Vergès, 2012). Pour ce qui est des tests ADN visant à prouver une filiation, ils n'ont aucune valeur juridique s'ils n'ont pas été ordonnés par le juge dans le cadre d'une mesure d'instruction judiciaire [71]. Les témoignages issus de l'hypnose sont irrecevables (Mekki, 2015). Ces règles sont à mettre en parallèle avec les règles américaines d'admissibilité des preuves (*exclusionary rules*), comme la règle de ouï-dire (*hearsay rule*) qui fait l'objet de plusieurs articles notables en économie du droit (Kobayashi and Parker, 2000) [72]. Ces règles ne concernent que la valeur probante d'une preuve donnée, mais pas l'issue du litige dans sa globalité.

En matière d'évaluation des preuves, les travaux de la thèse portent sur les règles qui établissent un lien entre la solution du litige et la crédibilité globale des parties. En France, le législateur et la jurisprudence apportent dans de nombreux cas une réponse précise quant à la valeur probante des pièces d'un dossier mais la question de l'évaluation des preuves dans leur globalité est assez peu développée. A l'inverse, cette question est très discutée aux Etats-Unis à travers la notion de standard de preuve (*standard of proof*), qui fait référence au degré de conviction minimal que doit avoir le juge pour trancher le litige en faveur d'une

70. Le Code Civil précise en son article 1316-1 que « L'écrit sous forme électronique est admis en preuve au même titre que l'écrit sur support papier, sous réserve que puisse être dûment identifiée la personne dont il émane et qu'il soit établi et conservé dans des conditions de nature à en garantir l'intégrité. »

71. Articles 16-11 et suivants du Code Civil.

72. Federal Rules of Evidence 6 et suivantes.

partie. Il existe plusieurs standards aux Etats-Unis. Le principe de prépondérance de la preuve (appelé également balance des probabilités) est celui qui prévaut dans la majorité des litiges civils. Il impose au juge de donner raison à la partie dont la crédibilité est la plus forte, ce qui correspond à un standard de 50 %. Pour certaines affaires civiles, un standard beaucoup plus élevé est requis, appelé *beyond a reasonnable doubt* (hors de tout doute raisonnable). Ce standard s'applique en matière pénale et se situe autour de 90 %. En présence d'un tel standard, le demandeur doit convaincre le juge de sa cause de telle sorte qu'il ne subsiste pas de doute raisonnable. Enfin, il existe un troisième standard se situant à un niveau intermédiaire (environ 80 %). Celui-ci s'applique pour certains cas précis, par exemple en matière de protection des brevets (cf. chapitre 4).

Le standard de preuve n'est pas défini en tant que tel dans la loi française, mais la place du doute est théoriquement très limitée. La Cour de Cassation affirme dans son rapport annuel de 2012 (Cass., 2012, p215) : « En principe, le doute n'est pas compatible avec la décision de justice. » Cependant, dans la pratique, le juge ne peut pas refuser de « trancher le litige au prétexte que la vérité lui paraît inaccessible et incertaine » (Cass., 2012). Des règles sont donc nécessaires pour orienter la décision du juge en cas de doute. Le Code Civil affirme en son article 1162 que « dans le doute, la convention s'interprète contre celui qui a stipulé et en faveur de celui qui a contracté l'obligation ». En matière de licenciement, l'article L. 1235-1 du Code du Travail stipule que « si un doute subsiste, il profite au salarié" ». Ces textes montrent que la place du doute est limitée dans le sens où une des parties doit emporter l'*intime conviction* du juge pour gagner le procès. Ainsi on considère généralement que le standard de preuve est élevé en France, de l'ordre de 90-95 % (Clermont and Sherwin, 2002), et qu'il correspond au plus haut standard pratiqué aux Etats-Unis.

Cependant, l'intime conviction ne supprime pas le doute. Elle fait peser le risque de la preuve sur l'une des parties et contribue ainsi à créer une asymétrie entre les parties. En effet, une partie doit s'efforcer de convaincre le juge alors que l'autre peut gagner le procès en faisant douter le juge. A cet égard, il convient de faire le lien entre le standard de preuve et la charge de persuasion, qui sont deux concepts intimement liés. La partie qui supporte la charge de persuasion est celle qui doit être la plus convaincante pour gagner le procès (cf. chapitre 3), alors que le standard de preuve spécifie dans quelle mesure cette partie doit être plus convaincante que l'autre. Ainsi, la charge de persuasion revient au demandeur dès lors que le standard de preuve impose à celui-ci d'être au moins aussi crédible que le défendeur pour gagner le procès (standard > 50 %). Les règles de preuve françaises sont donc caractérisées par un degré d'exigence élevé vis-à-vis du demandeur mais le renversement de la charge de persuasion est susceptible d'inverser les rôles.

2.3 Une analyse comparée de la procédure civile

Les travaux de la thèse comparent les conséquences de différentes règles de preuve qui s'appliquent dans les deux principales traditions légales : la *common law*, qui concerne principalement les pays du *Commonwealth*, et la *civil law*, qui trouve ses origines en Europe. Cette analyse comparée se justifie en premier lieu par des raisons empiriques, puisque certains aspects du droit de la preuve se différencient fortement entre ces deux traditions juridiques. Alors que la littérature utilise généralement la *common law* comme toile de fond, nous accordons une place importante aux règles de la tradition civiliste. De plus, l'approche comparée des conséquences des règles de procédure civile nous semble indispensable pour approfondir l'étude comparée des systèmes juridiques. En effet, la littérature qui

compare les deux traditions juridiques est essentiellement tournée vers l'origine du droit, et conclut à la supériorité de la *common law* (Posner, 1973; La Porta et al., 1998) sans procéder à une analyse fine de la substance des règles de droit.

Des règles de preuve différentes selon les traditions juridiques

Une spécificité de la thèse, par rapport à la littérature en économie du droit, est d'accorder une place privilégiée aux règles de la tradition civiliste, en particulier françaises. Les normes civilistes sont mises en perspective avec les normes anglo-saxonnes qui font l'objet d'une littérature plus volumineuse. La thèse s'inscrit ainsi dans la lignée des travaux de Deffains and Doriat Duban (2001) et de Deffains et al. (2007) qui étudient certaines spécificités françaises des règles de preuve, *i.e.* respectivement la règle française d'allocation des coûts et le rôle actif du juge dans le processus de recherche de preuves.

En matière de droit de la preuve, les traditions civiliste et de *common law* diffèrent sur deux points majeurs. Tout d'abord, les pouvoirs du juge et des parties sont répartis différemment lors du processus de découverte et d'administration des preuves. La littérature comparée en économie du droit repose souvent sur des simplifications assez fortes. La recherche de preuves s'inscrirait dans une logique accusatoire dans le cadre de la *common law* alors que le système serait inquisitoire dans les pays de tradition civiliste. Cette termino-

logie est cependant peu adaptée à l'étude de la procédure civile dans les pays civilistes [73], qui comporte des caractéristiques accusatoires et d'autres inquisitoires. Pour étudier les effets incitatifs des normes probatoires, nous analysons plus finement les rôles respectifs des parties et du juge dans le processus de recherche de preuves (voir le chapitre 2). Notre démarche met en lumière des éléments parfois inattendus. On pourrait supposer que la logique inquisitoire laisse beaucoup de place à l'incertitude du point de vue des parties, du fait du plus grand contrôle exercé par les magistrats dans la recherche de preuves. L'analyse des textes de loi montre au contraire que le juge filtre les requêtes des parties selon leur pertinence, transmettant ainsi une information aux parties concernant l'issue du litige. Aux Etats-Unis, les pouvoirs considérables des parties en matière de recherche de preuves conduisent à ce que de nombreux éléments soient découverts sans que les parties ne soient assurées du lien entre ces éléments et la solution au litige, ce qui peut au contraire générer de l'incertitude.

Les deux familles juridiques anglo-saxonne et civiliste se distinguent également du point de vue du standard de preuve (Clermont and Sherwin, 2002). Le standard de preuve définit la force probante requise pour qu'une des parties (celle qui a la charge de la preuve) gagne le procès (Fluet, 2011). En effet, les magistrats de la tradition civiliste suivent leur intime conviction alors qu'ils sont généralement liés au principe de prépondérance des preuves dans la *common law*. Cette opposition entre les deux traditions est étudiée par Demougin

73. Le juriste Loïc Cadiet préfère utiliser la conception coopérative du procès, qui « transcende la distinction de la conception accusatoire et de la conception inquisitoire de la procédure, qui n'ont qu'une valeur pédagogique, essentiellement en matière pénale, mais qui n'ont jamais vraiment fait sens en procédure civile, encore moins depuis le nouveau code de procédure civile français. Le procès civil ne peut être ni la seule chose du juge, ni la seule chose des parties [...] ». Source : `http://www.ahjucaf.org/La-justice-dans-l-Etat-M-Loic-CADIET-professeur-a-l-Ecole-de-droit-de-la.html`

and Fluet (2005) qui analysent l'impact du standard de preuve sur les incitations à prendre des précautions et sur le risque d'erreur judiciaire. Notre analyse porte sur d'autres critères de bien-être social, le volume des litiges et le montant des dépenses engagées par les parties.

La nécessité d'une approche comparée tournée vers les conséquences du droit

Les premiers travaux en économie du droit visant à comparer la tradition juridique civiliste à celle de *common law* mettent en exergue l'importance de l'*origine* du droit. L'hypothèse d'efficience de la *common law* a été posée par Richard Posner dans son ouvrage *'Economics Analysis of Law'* en 1973 (Garoupa and Gomez, 2012), devenu incontournable et réédité six fois depuis cette date. Pour l'auteur, la substance des normes juridiques importe moins que le processus par lequel ces normes sont produites [74]. Richard Posner part du constat que les règles de la *common law* sont issues de la jurisprudence. De ce fait, elles sont efficientes, *i.e.* qu'elles induisent *de facto* une maximisation de la valeur associée à l'activité des parties au litige (*'joint value of the activities'*). Richard Posner oppose ainsi les pays de *common law* caractérisés par la prééminence des décisions judiciaires aux pays

74. Dans la première édition, Posner écrit : *"The differences among the law of property, the law of contracts, and the law of torts are primarily differences in vocabulary, detail, and specific subject matter rather than in method or policy. The common law method is to allocate responsibilities between people engaged in interacting activities in such a way as to maximize the joint value, or, what amounts to the same thing, minimize the joint cost, of the activities."*

civilistes dont le droit est codifié [75].

L'hypothèse d'efficience de la *common law* de Posner (1973) a donné lieu à une littérature conséquente visant à mettre en lumière les mécanismes par lesquels le droit jurisprudentiel peut conduire à cet optimum social. Plusieurs idées ont émergé pour expliquer la supériorité de la *common law*. Posner (1979) avance l'idée que les juges ont des préférences qui les amènent à privilégier le critère d'efficience à d'autres considérations, notamment celle d'équité. Ainsi, le mécanisme institutionnel de la *common law* tend vers un résultat conforme à ce que le marché aurait produit en l'absence de défaillance de marché. Rubin (1977) et Priest (1977) défendent l'idée que la *common law* est efficiente indépendamment des préférences et des incitations des magistrats. Pour eux, il existe une main invisible qui conduit les justiciables à remettre en cause les normes inefficientes, dans un contexte où la règle du précédent (*stare decisis*) s'applique [76].

Des analyses théoriques plus récentes tiennent compte des incitations et contraintes des juges (Zywicki, 2003) ainsi que de leurs potentiels biais (Gennaioli and Shleifer, 2007). Alors que la comparaison avec le droit codifié est bien souvent implicite, Ponzetto and Fernandez (2008) introduisent la possibilité de normes législatives (*statute law*) dans un système où le droit est produit par les juges selon la méthode du précédent (*case law*). Ces différentes analyses tendent à nuancer la position de Richard Posner sans vraiment

75. Dans des écrits ultérieurs, Richard Posner apporte des clarifications quant à la notion d'efficience. Il adopte le critère de Kaldor-Hicks développé par les économistes Nicholas Kaldor et John Hicks dans les années 1930, qui suppose que l'existence d'une règle de droit est souhaitable dès lors que les agents économiques qui bénéficient de la loi (les "gagnants") sont prêts à payer une somme plus élevée que le coût qu'imposerait cette loi aux agents économiques "perdants" (Lanneau, 2009).

76. Pour Rubin (1977) cela vient du fait qu'une action judiciaire a un coût qui ne peut être compensé que si l'adoption de la nouvelle norme accroît la richesse des parties. Priest (1977) suppose quant à lui que les conflits entre agents économiques sont plus fréquents lorsque les règles sont inefficientes.

remettre en cause l'hypothèse d'efficience de la *common law*.

Enfin, il faut noter que l'origine légale du droit joue un rôle central dans le mouvement *Law and Finance*, parfois appelé *Legal Origins Theory* (La Porta et al., 1998). Ces auteurs s'intéressent au contexte historique par lequel les normes ont émergé alors que l'analyse de Posner (1973) porte sur le mode de production du droit à un instant donné. Les conclusions de ces deux mouvements sont similaires : elles peuvent se résumer par la phrase *"Legal origin matter"*, et conduisent à affirmer la supériorité de la *common law*.

Nous adoptons au contraire une analyse comparée tournée vers les conséquences du droit. D'après Hadfield (2008, 2011), la différence entre les traditions civiliste et de *common law* n'est pas seulement d'ordre institutionnel mais également d'ordre comportemental. Cette vision plus nuancée invite à s'interroger sur les raisons pour lesquelles les acteurs de la justice se comportent différemment dans les deux traditions, plutôt qu'à postuler des différences *a priori*. C'est dans cette perspective que se situent les travaux de la thèse, dont l'objet n'est pas d'établir une hiérarchie des systèmes juridiques, mais de mettre en lumière les mécanismes par lesquels les normes peuvent affecter les différents critères de bien-être social.

L'étude des conséquences du droit nous semble incontournable afin de nourrir la réflexion sur l'efficience comparée des différentes traditions juridiques. En effet, l'efficience désigne le fait que les règles juridiques induisent des comportements optimaux et maximisent le bien-être social. Puisque l'efficience est, par définition, une conséquence du processus de normalisation, il convient de l'étudier comme telle. A ce titre, l'étude des conséquences des normes juridiques peut s'inscrire dans un mouvement complémentaire à ceux développés par Posner (1973) et La Porta et al. (1998) : une telle analyse peut conforter et donner du

sens à certains des résultats auxquels ces auteurs aboutissent, ou au contraire les remettre en cause.

Les conclusions d'une analyse des conséquences comportementales du droit sont d'autant plus pertinentes que les règles de droit considérées sont modélisées de manière fine. Dans la thèse, nous nous efforçons d'ouvrir la "boîte noire" du processus judiciaire. Il s'agit dans un premier temps de décrire les règles de preuve et de discuter de la manière adéquate de les modéliser. Cela nous permet dans un second temps de mettre en lumière les paramètres de la procédure civile susceptibles d'entraîner, par exemple, une spirale des coûts ou un accroissement du volume des litiges. Notre vision d'une analyse économique du droit comparée tournée vers l'étude des conséquences des normes, et tenant compte de la substance de ces normes, rejoint celle de Gillian Hadfield (2008) : *"It is clear, however, that making further progress on this comparative project will require substantially more refined understanding of the institutional features that define different legal regimes and more detailed analysis of how institutions determine the behavior of legal actors, particularly judge."*

En outre, cette réflexion sur les normes juridiques peut participer à l'établissement d'un dialogue durable entre la communauté économique et juridique en France. En économie du droit théorique, les normes juridiques constituent bien souvent les hypothèses des modèles utilisés pour analyser les comportements des justiciables. Une étude fine des règles de droit doit ainsi permettre de rendre les hypothèses des modèles plus réalistes. En particulier, ces hypothèses peuvent être construites en s'appuyant sur les travaux juridiques qui apportent un éclairage sur l'interprétation des différentes normes et la pratique judicaire.

Une analyse fine de la substance des normes et de leurs spécificités par rapport aux autres pays et traditions juridiques aboutit à des résultats nécessairement plus nuancés

que ceux de Posner (1973) et La Porta et al. (1998). En effet, l'hypothèse d'efficience de la *common law* peut être vérifiée pour certaines normes —ou plus généralement pour certains domaines de la loi— mais pas pour d'autres. L'approche tournée vers les conséquences est donc un vaste projet qui nécessite d'explorer les multiples domaines du droit. De plus, chaque norme est susceptible d'affecter positivement certains critères de bien-être social tout en ayant des effets négatifs sur d'autres aspects du bien-être. Si l'on envisage plusieurs règles dans le même temps, on peut conclure à l'existence d'équilibres multiples (Garoupa and Gomez, 2012). Deux traditions juridiques peuvent ainsi être caractérisées par deux équilibres différents, ce qui peut refléter un choix de société *i.e.* une pondération différente des critères de bien-être social [77].

3 L'angle de l'analyse économique du droit

L'Analyse Economique du Droit (ou *Law and Economics*) est aujourd'hui considérée comme une discipline à part entière dans la littérature en sciences sociales (code JEL : K). Elle a émergé dans sa forme moderne aux Etats-Unis sous l'impulsion des travaux de l'économiste britannique Ronald Coase. Celui-ci publie en 1960 un article intitulé *The Problem of Social Cost* qui a donné lieu à un théorème, dénommé « théorème de Coase » par Georges Stigler (1966). Ce théorème est sujet à deux interprétations principales (Bazzoli and Kirat, 1997), dont l'une consiste à appréhender le droit comme un moyen d'atténuer

77. Par exemple, les travaux de Demougin and Fluet (2005) suggèrent que le principe de prépondérance de la preuve permet de maximiser le niveau de précaution des auteurs potentiels de préjudice, alors que le standard plus élevé des pays civilistes serait plus adapté pour éviter les erreurs judiciaires. Les travaux de la thèse mettent également en évidence des arbitrages de ce type. Dans le chapitre 1, nous montrons que le standard de preuve élevé dans les pays civilistes est susceptible de limiter le nombre de poursuites judiciaires non-fondées mais a un impact négatif sur les incitations à négocier.

le problème des coûts de transaction et de participer ainsi à une meilleure coordination des agents économiques. Le mouvement *Law and Economics* s'inscrit dans cette seconde acceptation du théorème de Coase.

Les précurseurs de ce mouvement sont Calabresi (1970), qui étudie l'efficience des règles de responsabilité civile délictuelle, et Posner (1973), tenant de l'école de Chicago, qui s'intéresse à l'efficience des règles de concurrence et de la *common law*. A partir des années 1980, les travaux s'inscrivant dans le courant *Law and Economics* se multiplient aux Etats-Unis. Des auteurs comme Steven Shavell (1982; 1989), Lucian Bebchuk (1984), Robert Cooter et Daniel Rubinfeld (1989) ou encore Avery Katz (1988; 1990) publient des articles notables dans le domaine de l'organisation de la procédure judiciaire. En parallèle, le mouvement se développe en Europe continentale, notamment en Allemagne et aux Pays-Bas, et émerge plus tardivement en France (Mackaay and Rousseau, 2000).

L'importance économique du droit mise en avant par Coase (1960) justifie l'adoption d'une approche interdisciplinaire, à l'intersection entre l'économie et le droit. Cependant, le courant de l'Analyse Economique du Droit ne se résume pas à l'étude des problématiques qui sont à l'interface du droit et de l'économie. Il s'agit également d'utiliser des outils développés par des économistes pour analyser le droit [78]. Dans cette partie, nous montrons que les outils théoriques développés en Analyse Economique du Droit sont pertinents pour étudier la procédure civile, puis nous présentons une revue de littérature des modèles que

78. Cette approche est conforme à la définition que donne Kirat (2012) de l'Analyse Economique du Droit, à savoir « une branche de la science économique qui applique ses méthodes et ses cadres conceptuels à l'étude du droit ou des effets économiques des règles juridiques ». C'est également la position de Lewis Kornhauser (2004), qui affirme : *"These projects [ceux de l'analyse économique du droit] have in common the application of micrœconomic theory to understanding of legal rules and institutions."* (cité par Lanneau 2009; page 2-3).

nous utilisons par la suite.

3.1 Intérêt de l'analyse économique du droit

L'approche économique présente un double intérêt : elle permet d'une part de modéliser le rôle incitatif des règles, et d'autre part de tenir compte des interactions existant entre les acteurs d'un procès.

Modéliser le rôle incitatif des règles

Le mouvement *Law and Economics* s'inscrit dans une philosophie pragmatique. Il est profondément ancré dans la tradition du réalisme juridique (*legal realism*) apparue aux Etats-Unis au XIX^{ème} siècle avec des juristes comme Oliver Holmes, Morton Horwitz ou Roscœ Pound. Alors qu'à cette époque la pensée juridique dominante, en Europe comme aux Etats-Unis, donne une place prépondérante aux concepts, à l'esprit du système et au formalisme de la loi, ces juristes plaident au contraire pour une théorie juridique qui va de pair avec l'expérience et la réalité des faits.

S'inscrivant dans cette philosophie pragmatique, le courant de l'économie du droit s'appuie sur des outils développés dans d'autres domaines de l'économie afin d'évaluer les conséquences des règles de droit. En effet, les économistes utilisent des outils qui se prêtent bien à cette problématique puisque les incitations sont au centre de leurs analyses. Ils ont développé des méthodologies permettant d'appréhender les comportements des agents économiques sur les marchés en fonction de multiples paramètres comme les prix pour les consommateurs ou le coût des facteurs de production pour les firmes. Même si l'on s'extrait d'une pure logique de marché, l'étude des incitations est également indispensable

pour préconiser une politique économique *ex ante* ou pour évaluer ses conséquences *ex post*. Au final, la majorité des travaux en économie vise à identifier les réactions des agents économiques face à une modification de leur environnement.

En particulier, la méthode microéconomique est propice à l'étude des conséquences des normes juridiques. Il s'agit d'analyser le comportement d'un agent économique supposé représentatif en fonction de multiples paramètres. Chaque règle de droit constitue une variable susceptible d'affecter les comportements économiques. Une telle analyse part du postulat que les agents économiques ne sont pas passifs par rapport au droit mais qu'ils agissent de manière stratégique en fonction des prix implicites que représentent les normes juridiques. Si l'on considère le système judiciaire comme un ensemble de règles spécifiant les comportements des différents acteurs au sein de cette sphère, alors la microéconomie permet d'apporter un certain éclairage sur les conséquences de l'organisation judiciaire.

Modéliser les interactions entre les acteurs du procès

Les conflits judiciaires sont caractérisés par de multiples interactions entre les parties [79]. En amont de la procédure judiciaire, chaque litige naît d'une interaction entre au moins deux agents économiques : d'une part, la décision de respecter ou non la loi dépend des

79. Les parties interagissent également avec leur avocat ce qui peut avoir des conséquences sur l'issue du litige (e.g. Emons, 2008; Visscher, 2014). Cependant, notre analyse ignore l'existence de potentiels conflits d'intérêt entre les parties et leur avocat. Nous mettons également de côté les interactions stratégiques avec le juge, que nous ne considérons pas comme un « joueur ». Dans la pratique, les juges peuvent parfois inférer les faits réels du comportement des parties. Par exemple, un magistrat peut déduire d'un refus de se soumettre à un test ADN l'existence d'un lien de paternité en application de l'article 11 du Code de Procédure Civile français. Voir par exemple Kobayashi and Parker (2000) et Demougin and Fluet (2008) qui font l'hypothèse d'un juge bayésien.

incitations des victimes à ester en justice, et d'autre part, le choix d'initier un procès est la conséquence du comportement (supposé) illégal d'un agent au détriment d'un autre. Une fois que l'affaire est portée en justice, les interactions entre le demandeur et le défendeur demeurent omniprésentes car l'issue du litige dépend de leur comportement respectif. La recherche d'une solution négociée amène nécessairement les parties à interagir. De plus, dans la phase de production de preuves, les décisions des parties s'influencent mutuellement puisque l'issue du procès est fonction de la crédibilité d'une partie par rapport à l'autre.

La théorie des jeux est un outil puissant et adapté à l'étude des interactions entre le demandeur et le défendeur. Elle suppose que ces interactions sont de nature stratégique, *i.e.* que chaque joueur agit de manière rationnelle en anticipant la réaction de l'autre joueur. Cet outil s'applique particulièrement bien à l'étude de la procédure judiciaire car il permet de modéliser deux grands types d'interactions (Hirshleifer, 1995) que l'on retrouve dans la sphère judiciaire. D'une part, les joueurs ont des interactions d'échange s'ils peuvent négocier et parvenir à un accord mutuellement profitable. Puisque le surplus de négociation peut être réparti entre les joueurs, les modèles faisant cette hypothèse sont appelés "modèles avec rente négociable" (*tradable rent models*). Dans un contexte judiciaire, les parties ont des interactions d'échange dans la mesure où elles peuvent à tout moment négocier. Pour que l'accord soit mutuellement avantageux, le défendeur doit offrir une compensation financière au demandeur d'un montant inférieur à sa propre perte espérée en cas de procès mais supérieur au gain espéré du demandeur. Théoriquement, en vertu du théorème de Coase (1960), les parties devraient toujours être en mesure de trouver un accord car les coûts de procès induisent un surplus de négociation nécessairement positif.

D'autre part, les agents économiques peuvent être dans une relation plus antagoniste, dont l'issue sera nécessairement favorable à un joueur et défavorable à l'autre. C'est égale-

ment le cas des parties à un litige puisqu'une d'entre elles seulement sera vainqueur à l'issue du procès. Alors que la négociation permet d'obtenir un compromis entre les parties, la décision du tribunal est souvent plus tranchée, donnant raison à un des deux protagonistes. Dans ce cas, les économistes utilisent des modèles de rente non-négociable (*non-tradable rent models*) pour appréhender de telles interactions dites conflictuelles.

Les interactions d'échange et de conflit donnent lieu à des comportements différents. Dans le cadre d'une relation d'échange, les parties sont tentées de trouver un arrangement amiable afin d'économiser les coûts de procès; la logique de conflit les amène au contraire à accroître leurs dépenses judiciaires (donc les coûts de procès) pour maximiser leurs chances de gagner le procès. En règle générale, les modèles théoriques de litige adoptent une des deux approches : les parties sont soit dans une relation d'échange (e.g. Bebchuk, 1984) soit dans une logique de conflit (e.g. Farmer and Pecorino, 1999) [80]. Certains chapitres de la thèse sont consacrés à l'étude des interactions d'échange entre les parties (Partie 1) alors que d'autres concernent les interactions de conflit (Partie 2).

En étudiant ces deux types d'interactions séparemment, nous supposons implicitement que les interactions d'échange et de conflit se produisent à un temps différent du procès : les parties négocient puis, en cas d'échec, elles s'engagent dans une relation conflictuelle pour gagner le procès. Cependant, dans les faits, la frontière entre ces deux types d'interactions est poreuse. Ainsi, il est courant qu'une partie investisse pour produire des preuves avant même d'ester en justice [81]. A l'inverse, les parties peuvent attendre la fin d'un premier cycle

80. Quelques articles considèrent un jeu en deux étapes dans lequel les parties négocient avant d'engager des dépenses légales (e.g. Gong and McAfee, 2000; Poitras and Frasca, 2011; Farmer and Pecorino, 2013).

81. Cette possibilité est offerte aux justiciables français dans le cadre d'une procédure judiciaire spéciale, les mesures d'instruction *in futurum*. Ainsi, l'article 145 du Code de Procédure Civil français autorise les parties à demander au juge la mise en œuvre d'une expertise afin d'établir la preuve « des faits dont pourraient dépendre la solution d'un litige ».

de négociation avant de s'investir dans la recherche de preuves. Dans la pratique, elles sont donc dans une démarche de négociation en même temps qu'elles mettent toutes les chances de leur côté pour gagner le procès.

3.2 Cadre méthodologique

Nous utilisons des modèles de négociation pré-jugement et des modèles de recherche de rente pour modéliser respectivement les interactions d'échange (Partie 1) et les interactions de conflits (Partie 2). Dans cette partie, nous décrivons ces deux types de modèles.

Les modèles de négociation pré-jugement

Pretrial negotiation models have been developed to understand why pretrial negotiations sometimes fail in practice. Indeed, if information is perfect and transaction costs are sufficiently low, such negotiations are supposed to succeed because it is in parties' best interest to find an agreement in order to save the trial costs (Coase, 1960). If the negotiation takes the form of a take-it-or-leave-it offer, this is straightforward: The party making the offer is able to extract the whole negotiation surplus by proposing the offer that gives him the highest expected utility among the set of offers that the last-moving has an interest to accept. Wang et al. (1994), adapting the framework of Rubinstein (1982) to the case of pretrial negotiations, show that this result holds if parties alter offers in an infinite time horizon. The authors find that parties come to an agreement on the first round due to the discount factor they introduce into the model.

Yet, in practice, not all proceedings end with an agreement, particularly in civil-law

countries like France where the settlement rate is sometimes low. [82] In addition, if litigants achieve an agreement, it is often after months of negotiations. According to a study of the Department of Insurance in Texas, the median delay between injury and settlement is around 30 months for tort cases in Texas. Using French datas, Deffains and Doriat (1999) observe that parties generally settle shortly before the trial, at the last possible moment.

Two main avenues have been explored for explaining parties' failures to negotiate. (i) Asymmetry of information: Parties have unequal access to information which generates an adverse selection problem. For example, a claimant may ignore whether the firm or individual who has caused the damage has broken the law, or the defendant may be unaware of the true loss suffered by the victim. (ii) Overoptimism: Parties tend to overestimate their expected gain in case of trial, thus giving rise to divergent expectations. The theoretical literature on pretrial bargaining failures thus makes the distinction between "strategic models", postulating asymmetric information, and "divergent expectations models".

Adverse selection and overoptimism are two separate issues, at least in theory. Adverse selection is a purely informational problem which is overcome by litigants in a rational way. Conversely, in case of overoptimism, parties have biased beliefs even if they possess all relevant information available, which lies at odds with the assumption of perfect rationality. Overoptimism thus appears as one expression of parties' bounded rationality. However, in practice, informational asymmetries are at the heart of any judicial proceedings and it is a difficult task to disentangle the two types of problems. Taken together, empirical studies suggest indeed that informational asymmetries and divergent expectations coexist (Hylton and Lin, 2012). Furthermore, these two phenomena influence each other. One the one hand,

82. See Chapters 1 and 2.

informational asymmetries may induce some irrational behaviors, and, more specifically, the lack of information may explain parties' overoptimism. As suggested by Cooter and Rubinfeld (1994), "When the parties are both optimistic, at least one of them is uninformed". On the other hand, the optimism of one litigant automatically generates an asymmetry of information, because the extent of the bias in itself constitutes a subjective belief that cannot be credibly revealed to the opponent. Therefore, overoptimism and adverse selection can be viewed as two problems that are positively correlated. Nonetheless, since these two explanations of bargaining failures have been treated separately by scholars, I review strategic models and then divergent expectations models before presenting the literature that combines both types of models by including an optimistic bias in a strategic model.

Strategic models

Since the 1980's, numerous Law and Economics scholars have worked to challenge the assumption of perfect information in the judiciary context by developing models commonly referred to as strategic models. Before describing these models, it is necessary to explain why there may be some asymmetries of information between parties. The transmission of information is at the heart of the judicial process since it determines both the outcome of the negotiation and the court's decision. There is no reason why parties may have the same information at the beginning of the case. Indeed, information is costly to obtain and may be the subject of strategic decisions by parties and their lawyers. Thus, numerous variables may give rise to asymmetry of information, like the defendant's degree of negligence and the amount of damage suffered in a tort case.

It is reasonable to assume that one party has superior information when proceedings

start, but one might expect litigants to share the information they have against their opponent throughout the case in order to obtain the most favorable settlement (Kaplow and Shavell, 2002). Therefore, it should be made clear why some asymmetries of information may persist during the course of the trial. First, litigants have no incentive to reveal information that is unfavorable to them since it would reduce their bargaining power and thus their expected utility in case of trial. Second, some pieces of information are costly to share in a credibly way, this is especially the case of intangible elements like litigants' preferences. For instance, if a litigant claims that he is risk-averse, this can be interpreted by his opponent as a strategy rather than as the truth. Third, parties may be tempted to keep secret some pieces of information that are favorable to them to counter their opponents' arguments in case of trial.

Numerous strategic models have been developed assuming imperfect information. All of them show that a fraction of cases go to trial if litigants are imperfectly informed, and conclude that the asymmetry of information impedes pretrial negotiations. This result is robust with numerous assumptions that are reviewed in what follows. Spier (1992) considers the case of multiple periods. The plaintiff makes a limited number of settlement offers and the defendant, who can accept or reject each offer, has a private information on the amount of damage. In some cases, parties fail to find an agreement. Moreover, if the case settle, the author shows that the defendant accepts the offer at the last period ("deadline effect"), which increases judicial delays. Nonetheless, the vast majority of papers on that subject does not consider multiple periods. Rather, litigants are assumed to bargain as in an ultimatum game, in a sequence of two steps: One party makes a settlement offer to his adversary. If it is accepted, the case terminates. Otherwise, parties go to a costly trial. This

is the framework of all papers mentioned below.

Models postulating a two-stage sequence are traditionally distinguished according to whether the informed litigant makes the settlement offer. This assumption follows from two hypothesis (see Table 6): (i) Which of the litigants has a private information? (ii) Which of the litigants moves at first? The combination of these two hypothesis determines the informational structure of the game and therefore the type of model. If the informed litigant makes a settlement offer to the uninformed one, it is a signaling model in which the first mover can transmit some private information to his uninformed opponent. In the opposite case, it is a screening model in which the settlement offer made by the uninformed litigant is accepted only by one type of adversary.

First player / **Informed player**	**Claimant**	**Defendant**
Claimant	Signaling model	Screening model
Defendant	Screening model	Signaling model

TABLE 6 – Litigation models with asymmetric information

To this respect, Bebchuk (1984) models pretrial negotiations as a screening game in which the defendant, informed about his probability of success, makes a settlement offer to the uninformed plaintiff. The first signaling models are those of Png (1983) and Salant (1984). In Png (1983), the defendant has a private information on his own degree of negligence and makes an offer to the uninformed plaintiff, while it is the plaintiff, informed about

the amount of the recovery, who makes an offer to the uninformed defendant in the model of Salant (1984). Reinganum and Wilde (1986) build upon the informational structure of Salant (1984) by considering a continuum of defendants and plaintiffs. Additionally, there are some papers lying in a two-sided asymmetry information framework (Schweizer, 1989; Daughety and Reinganum, 1994). In these papers, each litigant has a private information on the outcome of the case.

In the papers mentioned above, the asymmetry of information is on the likelihood of success (Png, 1983; Bebchuk, 1984; Schweizer, 1989), the amount of damages (Salant, 1984; Reinganum and Wilde, 1986) or both of them (Daughety and Reinganum, 1994). More recent works assume that it lies on other parameters. For instance, Langlais (2008) and Farmer and Pecorino (1994) assume that parties' risk preferences are unknown to their adversary, and Chopard et al. (2010) explore the case where legal expenditures are private information. [83]

Divergent expectation models

Divergent expectation models assume that parties have different perceptions of the outcome of the case, which arises from overoptimism and self-serving bias. Individuals subject to overoptimism tend to overestimate positive events that could happen to themselves (e.g. living past 80) whilst underestimating negative events (e.g being fired from a job). Research in psychology emphasizes two types of factors underlying overoptimism (Milhabet et al., 2002). (i) Motivational factors: Overoptimism is a defensive mechanism motivated by the need for protecting one's self-esteem and reducing one's anxiety. (ii) Cognitive factors: The

83. A more detailed review of the literature can be found in Chappe (2005) and Deffains (1997) in French and also in Daughety and Reinganum (2005) and in Hay and Spier (1998) in English.

distortion of the reality is caused by cognitive errors.

The optimistic bias may be better understood when considering other people. In a seminal paper, Weinstein (1980) shows that people assess their own likelihood of positive events as being higher than the likelihood of the same events happening to others. This aspect of overoptimism is sometimes called "self-serving bias" or "egocentric bias" and reflects individuals' tendency to distort the reality in their favor. Numerous works have demonstrated the existence of such distorted beliefs. The study of Ross and Sicoly (1979) is a commonly cited example: They show among other things that members of married couples tend to overestimate their contributions to housework and that students overestimate their contributions to classroom discussions. Overoptimism and self-serving bias have been identified in the literature on pretrial proceedings as possible causes of negotiation failures (Loewenstein et al., 1993). Since these two concepts are very close, they are tackled simultaneously in what follows.

To account for overoptimism and self-serving bias, some theoretical papers assume that parties have divergent expectations of the outcome of the case during the pre-trial negotiation. With this assumption, Shavell (1982) finds that the set of possible agreements decreases as parties diverge in their opinion concerning their likelihood of success. Priest and Klein (1984) reach a similar conclusion and make the following prediction, known as the "50 percent rule": Since the most uncertain cases are litigated, the plaintiffs' success rate should tend toward 50%.[84] A major difference between Shavell (1982) and Priest and Klein (1984) lies in the way parties process information (Farmer and Pecorino, 2002). Priest and Klein (1984) assume that litigants' estimates are on average equals to the truth,

84. See also Landes (1971) and Gould (1973).

which means that they do not systematically over- or underestimate their probability of prevailing. The approach of Shavell (1982) is more naive since parties do not update their distorted beliefs throughout the negotiation process.

In Shavell (1982) as in Priest and Klein (1984), parties' expectations are exogenous. Two types of extensions have been made to account for optimism without setting subjective exogenous probability of winning the case. The first consists in endogeneizing the optimism bias using evolutionary game theory (Bar-Gill, 2006). Second, some papers introduce an optimistic bias in a strategic model, thus reconciling the divergent expectations assumption with that of asymmetric information. This framework provides a measure for the marginal effect of parties' optimism on the probability that negotiations fail which is not possible to a obtain in a divergent expectations framework (Langlais, 2008).

Strategic models with an optimistic bias

This line of research has been opened by Farmer and Pecorino (2002) who build upon Bebchuk (1984). As in Bebchuk (1984), the plaintiff receives the offer and has a private information about his probability of winning the case. In addition, both parties exhibit a (multiplying and then additive) self-serving bias. They are able to recognize their opponent's bias (though without estimating it precisely) but are not capable to recognize their own bias. Within this framework, Farmer and Pecorino (2002) find that a case is more likely to settle as the plaintiff's bias increases. A rise in the self-serving bias in the part of the defendant also impedes negotiations when the bias is additive, but its effect is ambiguous if the bias is multiplicative.

Deffains and Langlais (2009) adopt a more comprehensive view of the litigation process

by introducing risk-aversion in a model *à la* Bebchuk (1984). The plaintiff displays a self-serving bias which emerges as litigants anticipate the way courts interpret the law, thus reflecting the legal interpretative process. The effect of the self-serving bias on the probability of trial is found to be ambiguous. Langlais (2011) develops a model *à la* Bebchuk (1984) with risk-aversion in which the asymmetry of information lies on the extent of the optimistic bias. The results obtained are in line with that of Shavell (1982) and Farmer and Pecorino (2002): An increase in the self-serving bias reduces the frequency of trials. However, risk-aversion has an ambiguous effect on the settlement likelihood.

Landeo et al. (2013) also account for the self-serving bias and for asymmetric information during pretrial negotiations but their paper distinguish from those mentioned above in several respects. First, the distinction is made between the amount of economic damages, which is known only by the plaintiff, and that of non-economic damages, which generates an additive self-serving bias in the part of both parties. Moreover, the authors use a signaling model since it is the informed plaintiff who makes a settlement offer. Finally, the authors do not only study the effect of the self-serving bias on negotiations but also on the defendant's level of care prior to the trial.[85] Their findings support the conclusion of Shavell (1982), among others, namely that the self-serving bias negatively affects the settlement rate.[86]

In the same vein, Chappe and Giraud (2013) introduce an optimism bias in a screening model with ambiguity, where ambiguity refers to parties' lack of confidence in their own

85. The level of care determines the probability of accident and all victims are assumed to initiate a judicial action after having been injured.

86. With respect to the defendant's level of care, Landeo et al. (2013) show that an increase in the defendant's self-serving bias leads him to take fewer precautions which increases the number of accidents and the number of proceedings.

estimate of their probability of winning the case. The effect of ambiguity and of optimism on the settlement stage but also on the defendant's level of care is studied. Contrary to models previously cited, only plaintiffs display an optimistic bias, but the model allows for plaintiffs' pessimism. The authors show that regardless the degree of ambiguity, negotiations tend to fail more often if the plaintiff is optimistic. [87]

Les modèles de recherche de rente

In the second part of the thesis, I study parties' decisions to produce arguments in order to convince the court. To this end, I use rent-seeking models which are powerful instruments for describing the evidence production process and the effect of rules of proof on the social cost of litigation. Therefore, this part of the thesis falls within the rent-seeking literature applied to the judicial process. Yet, this topic is less documented than the literature about parties' incentives to settle prior to the trial.

This strand of the literature has been initiated by Tullock (1980) who has introduced the function often used in rent-seeking model, referred to as the Tullock function, to compute parties' success probability according to their effort. Katz (1988) provides a framework to analyze parties' behaviors with regard to legal expenditures. The central assumption is that parties spend resources to produce arguments and therefore increase the probability that the court will decide the case in their favor. Within this framework, different features of the legal procedure have been studied including fee shifting (Braeutigam and Panzar, 1984; Farmer and Pecorino, 1999; Gong and McAfee, 2000; Baye et al., 2005) and the adversarial versus inquisitorial nature of the judicial system (Parisi, 2002). To the best of

87. Moreover, the degree of optimism is found to be positively correlated to the defendant's level of care.

my knowledge, Bernardo et al. (2000) is the only paper that introduces rules of proof in a rent-seeking setting. [88] The second part of the thesis is also close to papers introducing some asymmetries into rent-seeking games. To this respect, Dari-Mattiacci et al. (2015) study how asymmetries in the litigation success function affect rent dissipation. In Hirshleifer and Osborne (2001), the asymmetry comes from the introduction of a sequence in the rent-seeking game. The authors compare the Nash to the Stackelberg-protocol with regard to the aggregated litigation cost.

4 Organisation de la thèse

L'ensemble des travaux présentés dans cette thèse est consacré à l'étude des conséquences des règles de preuve sur les comportements justiciables, et *in fine* sur les coût social des contentieux. Chaque chapitre porte sur une ou plusieurs normes probatoires et analyse différentes décisions des parties. En outre, nous adoptons une perspective comparée des traditions civilistes et de *common law*.

La thèse se décline en deux parties, chacune étant composée de deux chapitres. Dans la première partie, nous étudions le comportement des parties en amont du processus judiciaire, lorsque celles-ci ont encore la possibilité de parvenir à un accord; elle porte donc sur les interactions d'échange qui peuvent exister entre les parties. Des modèles stratégiques (Bebchuk, 1984; Reinganum and Wilde, 1986) et optimistes (Shavell, 1982) de résolution des litiges sont développés pour appréhender les décisions d'aller en justice et de négocier. Ils permettent de tenir compte des asymétries informationelles entre les parties et de leur excès d'optimisme. En mobilisant ces outils, notre analyse vise à établir l'effet des règles

88. See Section 3.1 of Chapter 3 for details on the methodology used by Katz (1988) and Bernardo et al. (2000).

de preuve sur le volume du contentieux.

- ➙ Le chapitre 1 analyse les conséquences du standard de preuve sur les décisions d'initier une action en justice et de négocier. Nous abordons la question du lien entre le standard de preuve et les incitations à recourir au système judiciaire qui n'est pas étudié dans la littérature en économie du droit.
- ➙ Le chapitre 2 étudie l'effet des règles qui organisent la découverte des preuves sur l'issue des négociations pré-jugement. Son originalité est de prendre comme point de départ une analyse fine des différentes règles gouvernant la recherche des preuves en France et aux Etats-Unis.

La seconde partie est centrée sur le processus de production de preuves qui précède l'audience finale. Dans cette phase du litige, les parties ont des interactions conflictuelles car l'une d'entre elles seulement gagnera le procès. Des modèles de recherche de rente à la Tullock (1980) sont développés pour analyser les comportements des parties, en particulier leurs incitations à engager des dépenses privées dans l'espoir de gagner le procès.

- ➙ Le chapitre 3 étudie l'effet du standard de preuve et de la charge de production sur le montant des dépenses privées engagées par les parties. Nous apportons une réflexion sur la modélisation des différentes règles de preuve dans le cadre d'interactions conflictuelles entre les parties.
- ➙ Le chapitre 4 porte sur la stratégie de défense du défendeur en fonction du standard de preuve et de la charge de production. Cette problématique n'est quasiment pas abordée dans la littérature en économie du droit.

En conclusion, nous reprenons les résultats des différents chapitres et nous terminons par quelques pistes de réflexion.

Première partie

Volume of Litigation and Evidentiary Rules: A Comparative Perspective of the Common-Law and the European Continental Tradition

1 Standard of Proof and Volume of Litigation

1 Introduction

Industrialized countries face problems of disproportionate cost of their judicial system and of excessive length of proceedings. The cost-effectiveness of the the judiciary is one of the lawmakers' objectives —or at least one must admit that it is one substantial constraint for the public authorities when they initiate judicial reforms. A number of factors have contributed to increase this cost, chief among which is the volume of litigation. The more citizens recourse to the judge when they are confronted to a litigious situation, the higher the volume of litigation is. However, the propensity to sue is insufficient to address this issue because many initiated proceedings end up with a negotiated agreement. Thus, the parties' propensity to settle once suit has been brought is also of interest.

This chapter analyzes the link between the standard of proof and the volume of proceedings. Interestingly, the question of the volume of litigation arises in different terms in the civil law and in the common law traditions, and the standard of proof strongly differs between the two traditions. With regard to the volume of cases pending before civil courts, individuals seem to be very likely to recourse to the judiciary to get financial compen-

sation in common law countries. Indeed, while there are lively discussions in the United States and in the United Kingdom about the actual or supposed existence of a so-called "litigation crisis", such debates are far from being so prevalent in Continental European countries. Moreover, the propensity to settle is higher in the common law tradition: Litigants effectively access to the judge in 75% of the cases in France whereas this figure is close to 3% in the United Kingdom and in the United States (Haravon, 2010). [1] This has led some authors to speak of the "decline of the trial" in common law countries (Galanter, 2004) while discussions in France are steered toward the necessity to encourage the use of Alternative Dispute Resolution (ADR).

The issue that arises is why litigants have different incentives in common law and in civil law countries. In this chapter, I will argue that the standard of proof may be part of the explanation for these different patterns. Indeed, the standard of proof strongly differs between the two traditions. In the Continental European legal system, the adjudicator has to be convinced that the defendant is faulty without the shadow of a doubt before ruling against him. Thus, a court is expected to decide a case on the basis of a very high standard of proof (around 90%). This standard is much lower in common law countries where civil claims must be proved by a preponderance of the evidence also called balance of probabilities or "more-likely-than-not criterion" (Clermont and Sherwin, 2002). This means that the adjudicator decides in favor of the litigant whose version is more probably true than not true with regard to evidence. Thus, a party prevails at trial when the probability that his claim is true is greater than 50%.

The standard of proof is closely tied to the probability of success of each litigant in the event of trial. In this way, it affects their incentives to sue and to settle. To investigate

1. See Section 3 for more details on these figures.

the relationship between the standard of proof and the propensity to settle, a pretrial negotiation model *à la* Bebchuk (1984) is developed in which the burdened party is assumed to have a private information on the evidence he holds. The burdened party refers to the litigant who has to bring evidence to the court to prove the underlying facts. [2] Moreover, the negotiation phase is preceded by a first stage during which an alleged victim decides whether to take legal proceedings after having suffered a damage.

The model shows that the effect of the standard of proof on victims' propensity to sue depends on the identity of the burdened litigant. A high standard is associated to more lawsuits if the claimant has the duty to come with evidence, which corresponds to the general case. However, when the burden of proving the facts is shifted to the defendant, this result is overturned and a high standard generates less claims. This result is intuitive since a high standard makes it more difficult for the burdened party to convince the court. With regard to parties' incentives to settle, the model suggests that pretrial negotiations fail more often when the standard of proof is stringent. It is noteworthy that this result holds even if the burden is shifted on the defendant. These findings are shown to be reasonably robust to the order of play during the negotiation and to the cost allocation rule.

These results are then confronted with empirical observations. In civil law countries, characterized by a very high standard of proof, individuals are less likely to bring a claim when they face a litigious situation, but they are also less likely to settle. Common law countries display a lower standard of proof and the claim rate as well as the settlement rate are higher. Thus, the results are in line with these observations and it can be concluded that the standard of proof may be part of the explanation for differences in individuals'

2. Within our simple framework, the burdened party brings evidence that is not challenged by the adverse party (who does not respond). This may be the case for most minor lawsuits. See Chapter 3 for a more detailed analysis of the burden of proof.

incentives to sue and to settle.

This chapter is connected to the literature investigating the determinants of litigants' incentives to settle and to sue. Regarding the propensity to settle, it is well-established that information asymmetries between parties cause negotiations to fail (Bebchuk, 1984; Reinganum and Wilde, 1986). [3] Other works show that overoptimism and self-serving biases contribute to reduce the range of mutually acceptable settlements thus lowering the propensity to negotiate (Landes, 1971; Shavell, 1982). [4] Litigants' behaviors during the course of negotiations is also driven by the framing effect (Korobkin and Guthrie, 1994; Rachlinsky, 1996; Korobkin, 2006), the anchorage bias (Korobkin and Guthrie, 2004; Pogarsky and Babcock, 2001), and by risk and ambiguity aversion (Farmer and Pecorino, 1994; Langlais, 2008; Chappe and Giraud, 2013) which may impede negotiations.

Regarding victims' incentives to sue, some papers highlight the effect of filing fees, of the amount of the award, of the probability of civil wrong (Chappe, 2011) and also of the quality of court decisions (Vereeck and Mühl, 2000) on the demand for trials. Katz (1990) and Farmer and Pecorino (1998) focus on the decision to initiate a frivolous claim and study

3. The asymmetry of information generally lies on the outcome of the case, either on the amount of the award (Reinganum and Wilde, 1986) or on the likelihood of success (Bebchuk, 1984). From a methodological standpoint, this chapter is close to this second category of models, since the burdened litigant is assumed to have a private information on the evidence he holds, which is equivalent to having an information on the likelihood of success. However, since the asymmetry of information concerns the evidence held by parties, the model allows to derive conclusions related to the law of evidence, thus taking a more institutional perspective. Moreover, a first stage is included into the model in which the alleged victim takes the decision whether to file suit.

4. See the section 3.2 of the general introduction for a more in-depth review on asymmetric information and overoptimism as causes of bargaining failures.

how it can be affected by the private cost of trial. Some articles pertaining to the volume of litigation adopt a dynamic perspective. A prime example is Priest (1989) who considers the congestion problem by endogeneizing time delays: The latter are determined by parties' decisions to sue and to settle that are themselves based on the magnitude of judicial delays. Finally, it is worth mentioning the literature on some legal devices aiming at improving the access to justice. To this respect, the literature on class actions (Backhaus et al., 2012) and on third-party financing (Deffains and Desrieux, 2014; Daughety and Reinganum, 2014; Avraham and Wickelgren, 2014) is related to the present chapter. Thus, several features of the judiciary have been identified as determining factors of parties' decisions to sue and to settle. However, to the best of my knowledge, the effect of procedural law on the volume of litigation has not been studied.

The second strand to which the present chapter relates is the literature on the standard of proof. This literature explores the way the standard of proof affects the social welfare. The first papers on the standard of proof have related to the criminal proceedings and have therefore insisted on the cost of errors as a welfare criterion (Davis, 1994). Some of them also account for the cost of litigation expenditures, be this cost supported by the defendant (Rubinfeld and Sappington, 1987) or by the prosecutor (Miceli, 1990). More recent papers have put forward the deterrent role of the standard of proof in the criminal field (Lando, 2009) but also in civil matters (Lando, 2002; Demougin and Fluet, 2006, 2008).

The rest of the chapter is organized as follows. In Section 2, a model is developed in which is analyzed the effect of the standard of proof on individuals' propensities to sue and to settle. The results of the model are discussed and linked to empirical facts in Section 3. For this purpose, the propensities to claim and to settle in the United Kingdom and in the United States are compared with those observed in France. Section 4 concludes.

2 The model

2.1 Assumptions

A first player, the claimant, denoted P, has suffered a loss and considers a second player —the defendant, denoted D— as liable.[5] Both litigants are risk-neutral. Let J be the compensation provided by the law if it turns out that D is liable. Before going to trial parties have the possibility to negotiate. D makes a take-it-or-leave-it settlement offer S that can be either accepted or rejected by P. Should he accepts the settlement amount proposed by the defendant, the litigation process is terminated. Should he refuses to settle, litigants go to trial.

In case of trial, parties' payoffs depend on the rule employed by the court to adjudicate. The evidentiary process is simplified so that only the burdened party comes with evidence, and the unburdened litigant does not respond. This may be the case in practice for minor civil litigation. After receiving evidence x from P ($x \geq 0$), the court determines the probability that D is truly liable, denoted $h(x)$ and compares $h(x)$ with the standard of proof λ.[6] Let the function $h(.)$ be common knowledge. The court's decision is denoted $d \in \{0, 1\}$, where $d = 1$ (resp. $d = 0$) means that D must (resp. not) pay damages to P. The decision's rule of the court is the following:

$$\left\{ \begin{array}{l} d = 0 \text{ if } h(x) < \lambda \\ d = 1 \text{ if } h(x) \geq \lambda \end{array} \right\} \tag{1.1}$$

To simplify the notation it is assumed that $h(x) = x$ but the results would be the same if

5. The issue of judicial errors does not come into play here because the *ex ante* behavior of the defendant is unknown.

6. h is increasing with x and $h(0) = 0$.

that function is differently specified. It should also be noted that the judge is not a player in this model in the sense that his decisions are not affected by the parties' behavior during the negotiation process. The cost of going to trial is C_p for P and C_d for D.

Even if x can take a continuum of values, the litigants' payoff can be affected in two ways according to the value of x compared to that of λ. There are consequently two types of claimants: 'High-type claimants' are those who possess enough evidence to prevail at trial ($x \geq \lambda$) and 'low-type claimants' are those who have brought a claim while they knew that they hadn't enough evidence to win the case ($x < \lambda$). Therefore, claims that have been filed by 'high-type claimants' can be referred to as 'meritorious claims' as opposed to 'frivolous claims' brought by 'low-type claimants'. This is in accordance with the definition of frivolous claims given by Katz (1990), namely claims "lacking merit and filed only in the hopes of obtaining a favorable settlement". However, it is noteworthy that in the present chapter, a claim is not meritorious in itself, but relatively to the standard of proof.

Parties undertake some negotiations prior to the trial, during which P has a private information on the level of evidence he has in his favor (previously denoted x). To interpret the result, I will assume that the informed player (here, P) is the litigant who bears the burden of proof. Indeed, the litigant who is expected to come with evidence necessarily knows what evidence he has in his possession. I assume that he is able to assess the evidence and to infer the probability that he wins the case. The adverse party (here, D) only knows that x is distributed according to a cumulative distribution function $G(.)$. The bargaining process takes place in two stages. D makes a take-it-or-leave-it settlement offer to P who can accept or reject it. If an agreement is reached, D pays to P the negotiated amount denoted S. The negotiation process is assumed to be costless.

Finally, it is assumed that undertaking proceedings comes at a cost denoted F for P.

This latter initiates a lawsuit if the expected value of the claim is positive. Moreover, I assume that $J - C_p > F$ which ensures that it is in the victim's interest to file a lawsuit if his claim is meritorious.

2.2 Equilibrium of the game

Given the previous assumptions, the move sequence of the game is the following: 1. P decides whether to sue. 2. D makes a take-it-or-leave-it settlement offer. 3. P accepts or rejects the offer. Several equilibria may occur depending on the value of the standard of proof. [7] The possibility of a pooling, a separating and a semi-separating equilibrium are explored in what follows.

Pooling equilibrium

First, the game displays a pooling equilibrium in which victims always decide to sue irrespective of the amount of evidence they possess. Hence, no information is revealed to D who may adopt two possible strategies depending on the standard of proof. The first one consists in refusing to negotiate or, likewise, proposing a settlement offer equal to zero ($S = 0$). Such an offer is accepted only by low-type P while high-type P refuse to settle and go to trial. This strategy is of interest for D if the standard of proof is rather high, thus making it difficult for P to win the trial. If the standard of proof is rather low, D opts for a second strategy: He proposes an offer ($S = J - C_p$) such that all claimants accept it, whatever their type. [8] A pooling equilibrium occurs only if D adopts this second strategy.

7. The equilibrium concept used is that of a sequential equilibrium (Kreps and Wilson, 1982).

8. It would not be rational to propose a positive offer inferior to $J - C_p$. The acceptation rate would be the same than with $S = 0$ but D would bear a higher loss if it is accepted.

Indeed, if D refuses to negotiate ($S = 0$), low-type P have to drop their claims and bear a loss equal to the filing costs F. Thus, it is in their interest to deviate from the pooling equilibrium by refraining from suing. [9]

Let f denote P's decision to file suit, with $f = 1$ if he decides to do so and $f = 0$ otherwise. Let α denote D's beliefs about the probability that P has enough evidence to prevail given that he has sued him. Let a denote P's decision whether to accept the offer where a is equal to unity when he accepts the offer and is equal to zero if he rejects it. [10]

Proposition 1.1. If $\lambda < \bar{\lambda}$, a pooling equilibrium occurs in which all victims bring an action regardless of whether they have collected enough evidence to win the case at trial. The characteristics of this equilibrium are the following:

(i) $f^* = 1$

(ii) $S^* = J - C_p$

(iii) $a^* = 1$

(iv) $\alpha^* = G(\lambda)$

Separating equilibrium

Such an equilibrium in which each party adopts a pure strategy never occurs in this framework. That would mean that only high-type P file a claim. Since D's beliefs have to be consistent with P's behavior at the equilibrium, D would make a high offer $(J - C_p)$

9. A pooling equilibrium in which P never sues is not possible due to the assumption $J - C_p > F$ which makes the decision to sue profitable for a high-type P.

10. P is assumed to accept the offer when he is indifferent between accepting or rejecting it.

in order to pay $J - C_p$ rather than $J + C_d$ if he proposes a less generous offer that would lead to a costly trial. This cannot be an equilibrium since low-type victims may adopt a "mimicry behavior" which consists in wrongly making D believe that they possess enough evidence to win the trial (Daughety and Reinganum, 2005). [11]

Semi-separating equilibrium

Finally, a semi-separating equilibrium may occur in which victims always bring a claim if they have enough evidence to prevail at trial but adopts a mixed strategy otherwise, meaning that P sues D with a probability β $(0 < \beta < 1)$ if $x \geq \lambda$. Thus, P's decision to sue D only conveys a partial information on P's type. D's beliefs are determined by means of the Bayes rule. The probability that P does not have enough evidence given that he has sued (I have previously denoted α this probability) can therefore be written:

$$\alpha = \frac{\beta G(\lambda)}{\beta G(\lambda) + 1 - G(\lambda)} \tag{1.2}$$

The low-type claimant brings a claim with a probability β, the value of β being such that D is indifferent between proposing $S = 0$ or $S = J - C_p$. Thus, the value of β is:

11. A separating equilibrium may occur if D adopts a mixed strategy: D makes a high offer with a given likelihood which has to be inferior to $\frac{C_p+F}{J}$ to discourage low-type P from falsely pretending to have evidence against him, and refuses to settle otherwise. Such an equilibrium is left aside for two reasons. First, it is not of great interest for the purpose of this chapter because the settlement likelihood is independent from the standard of proof. Second, the likelihood of a claim is decreasing with the standard of proof (it is equal to $1 - G(\lambda)$ since only high-type P bring a claim) which does not contradict the results of this section.

$$\beta = \frac{1 - G(\lambda)}{G(\lambda)} \frac{C_d + C_p}{J - C_p} \tag{1.3}$$

This value is necessarily positive and it is inferior to unity when $\lambda \geq \bar{\lambda}$. Given the definition of a frivolous claim (see Section 2.1), β can be interpreted as the probability that a frivolous claim is initiated. Furthermore, to be an equilibrium, the low-type claimant must also be indifferent between suing or not suing. Therefore, D proposes an offer equal to $S = J - C_p$ with a probability δ such that:

$$\delta = \frac{F}{J - C_p} \tag{1.4}$$

Proposition 1.2. A semi-separating equilibrium occurs if $\lambda \geq \bar{\lambda}$ and describes a situation in which victims possessing enough evidence to convince the adjudicator bring a civil action, and victims without sufficient evidence bring a claim only with a certain probability. The characteristics of this equilibrium are the following:

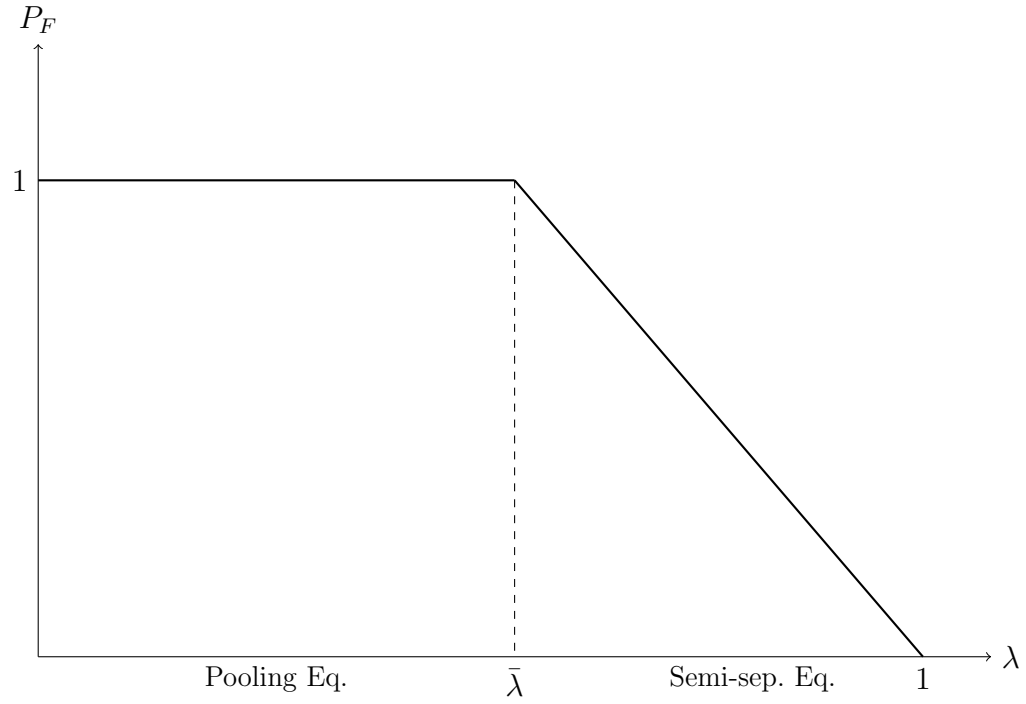
(i) $f^* = 1$ with a probability $\beta = \frac{1-G(\lambda)}{G(\lambda)} \frac{C_d+C_p}{J-C_p}$ if $x < \lambda$; $f^* = 0$ with a probability $1 - \beta$ if $x < \lambda$; $f^* = 1$ if $x \geq \lambda$

(ii) $S^* = J - C_p$ with a probability δ and $S^* = 0$ with a probability $1 - \delta$

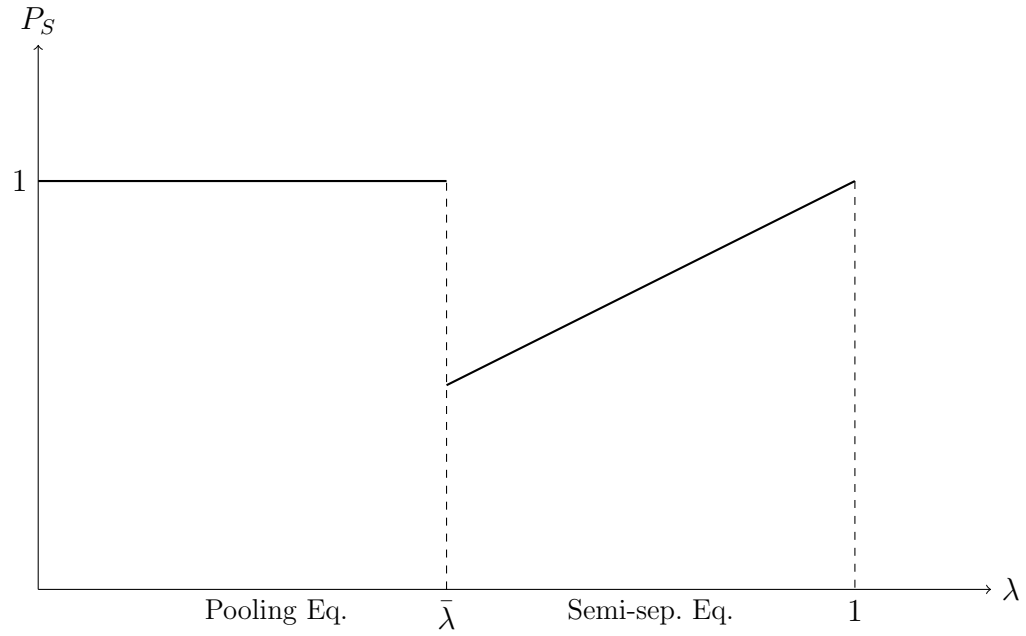
(iii) $a^* = 0$ if $x \geq \lambda$ and if $S^* = 0$; $a^* = 1$ otherwise

(iv) $\alpha^* = \frac{C_d+C_p}{J+C_d}$

These results are summarized in Table 7 where P_S and P_F are respectively the settlement and the claim probabilities, and $E(S)$ is the expected value of the settlement offer at the equilibrium. The probabilities of claim and of settlement are graphically represented by Figure 25 as functions of the standard of proof.



(a) Claim probability



(b) Settlement probability

FIGURE 25 – Effect of the standard of proof on the claim and the settlement probabilities

	$\lambda < \bar{\lambda}$	$\lambda \geq \bar{\lambda}$
	Pooling Equilibrium	*Semi-separating Equilibrium*
$\boldsymbol{P_F}$	1	$(1 - G(\lambda))\frac{J+C_d}{J-C_p}$
$\boldsymbol{E(S)}$	$J - C_p$	F
$\boldsymbol{P_S}$	1	$(1 - \frac{F}{J-C_p})G(\lambda) + \frac{F}{J-C_p}$

TABLE 7 – Main results

2.3 Implications

The model first allows to investigate the link between the standard of proof and citizens' propensity to bring a claim for compensation. Within the present framework, all victims file a suit when the standard of proof is low because they know that they can get a generous compensation from the defendant that will cover their filing costs. Instead, a strict standard of proof is associated to a lower probability of lawsuits, and this probability decreases as the standard of proof goes up (see Figure 25 (a)). In the extreme case of a standard tending toward unity, victims have to be perfectly credible and consequently they refrain from initiating a civil action.

The negative relationship between the standard of proof and the probability of suits stems from two effects: First, the claimant always sues the defendant if he has collected enough evidence to win the case. But a higher standard of proof automatically reduces the proportion of high-type claimants, which decreases the claim likelihood. Second, the defendant proposes less often a generous offer as the standard goes up (mathematically,

$\frac{\partial \beta}{\partial \lambda} < 0$). Both effects render victims more reluctant to sue as the standard increases, so we have the following result:

Result 1.1. A high standard of proof ($\lambda \geq \bar{\lambda}$) is associated to a lower claim rate than a low one ($\lambda < \bar{\lambda}$).

Second, the model gives an insight into the relationship between the standard of proof and parties' propensity to settle. Since parties have conflicting interests, the potential effect of the standard of proof on the settlement probability is *a priori* more ambiguous. When the standard is high, the claimant has to bring more evidence to the adjudicator, which encourages him to cooperate. But a high standard also dissuades the defendant from making a generous offer since he's more likely to win the case. Conversely, a low standard gives incentives to the defendant to negotiate but also makes the claimant more reluctant to accept the agreement. To put it in a nutshell, the standard of proof affects the defendant's and the claimant's propensities to settle in two opposite directions. Yet, with the assumptions of the model, the following result emerges:

Result 1.2. A high standard of proof ($\lambda \geq \bar{\lambda}$) is associated to a lower settlement rate than a low standard ($\lambda < \bar{\lambda}$).

Litigants are more likely to reach an agreement when the standard of proof is low since the defendant's offer is on average higher. Indeed, this latter has a limited bargaining power because the claimant can more easily convince the court of the defendant's liability. By contrast, a more stringent standard is susceptible to impede negotiations by making it more profitable for the defendant to refuse to enter into negotiations. Hence, this result implies that the standard of proof mostly alters the defendant's behavior. However, it should be noted that the claimant's behavior is also affected by the standard of proof but

at the margin. This is the reason why the function representing the settlement probability is positively slopped for high values of the standard of proof (see Figure 25 (b)). As the standard increases, the claimant's probability of success declines which makes him more prone to negotiate.

This analysis indicates that one must expect more frequent lawsuits and higher settlement rates in countries characterized by a low evidentiary standard. This theoretical case can be linked to the situation of common law countries. Indeed, these countries exhibit a low standard of proof, namely the preponderance of the evidence. On the contrary, the propensities to negotiate and to sue are expected to be lower in countries where the standard is more stringent, like civilian countries.

2.4 Comparative statics

Results of comparative statics can be derived when the standard of proof exceeds $\bar{\lambda}$ (see Table 8). If the standard of proof is below $\bar{\lambda}$, the claim and the settlement probabilities are not affected by the parameters of the model because they both are equal to unity (see Table 7).

First, the claim probability varies with the trial costs (C_d and C_p) and the amount of compensation (J). Since victims who access relevant evidence always engage in judicial proceedings, only the probability of frivolous claim (β) can be affected by those parameters. At the equilibrium, a victim who lacks evidence brings a claim with a probability that makes the defendant indifferent between settling and going directly to trial. In this context, an increase in trial costs may encourage defendants to propose a high settlement offer ($J-C_p$). Indeed, the defendant prefers to settle as C_d goes up to avoid having to pay trial costs and also as C_p increases since the amount of the settlement offer ($J - C_p$) is lower in this case.

To stay at the equilibrium, low-type claimants sue more often, thus leaving the defendant indifferent between the two options. On the contrary, an increase in damages (J) makes it more attractive for the defendant to bypass the negotiation process because the probability that he has to pay J is lower in case of trial than in case of settlement. To stay at the equilibrium, low-type claimants sue less often.

The settlement probability is influenced by claimants' costs of filing a lawsuit (F) and going to trial (C_p), and by damages (J). To have the intuition of this result, recall that the probability that parties settle is positively correlated with the probability that the defendant makes a high offer (δ).[12] At the equilibrium, this probability is such that a claimant lacking evidence is indifferent between suing or not suing. In this respect, an increase in the claimant's expenditures (C_p or F) would make a victim more reluctant to file a lawsuit. To stay at the equilibrium, such rise has to be compensated by an increase in the probability that the defendant makes a generous offer. Thus, an increase in C_p or F is associated to more settlements. Regarding damages, an increase in J would encourage victims to sue even if they lack evidence. The defendant adjusts his behavior by proposing less often a high offer, which in turn reduces the settlement probability.

Different parameters of the model affect the threshold that separates the two types of equilibria ($\bar{\lambda}$). This threshold is determined by the negotiation process and depends on the defendant's incentives to settle. Indeed, the defendant refuses to settle if the standard of proof exceeds this threshold and enters into a negotiation otherwise. Hence, this threshold tends to increase as the defendant's incentives to settle decrease for a given standard of proof. The incentives to settle depends on the judicial cost of a trial as well as on the amount of the compensation provided by the law. First, an increase of lawsuits costs tends

12. The probability of settlement can be written $G(\lambda) + (1 - G(\lambda))\delta$ using the previous notations.

	Effect of F on	**Effect of C_d on**	**Effect of C_p on**	**Effect of J on**
$\boldsymbol{P_F}$ (if $\lambda \geq \bar{\lambda}$)	0	+	+	-
$\boldsymbol{P_S}$ (if $\lambda \geq \bar{\lambda}$)	+	0	+	-
$\boldsymbol{\bar{\lambda}}$	0	+	+	-

TABLE 8 – Comparative statics

to push up the threshold. The latter is positively affected by C_p because the defendant's loss in case of settlement decreases as the claimant's court cost increases, [13] which makes the defendant more prone to negotiate. The result is similar for the defendant's court cost: A higher C_d increases the stake of the trial which inflates the cost of non-cooperation and encourages the defendant to negotiate. Second, damages (J) are negatively correlated with $\bar{\lambda}$. A rise in damages tends to increase the cost of negotiating more than the cost of refusing to settle. Therefore, it decreases the defendant's incentives to settle.

This static comparative analysis suggests that the threshold ($\bar{\lambda}$) may differ across countries. The cost of pursing a civil action has been estimated to be $38,200 in the Ontario court in Canada, $15,000 in the federal courts of the United States and while it varies between 5,000 and 10,000 euros in the European Union (Deffains and Desrieux, 2014). The trial costs seem to be higher in common law countries than in civil law countries, even if this issue is of growing concern in Europe. Thus, one expects this threshold to be higher in common law countries. This conjecture tends to reinforce the point of this chapter: If

13. This is the case because the settlement offer made by the defendant if he accepts to negotiate is $J - C_p$.

the threshold is higher in common law countries, these countries are more likely to fall within the category of "low-standard" countries. By contrast, the threshold is lower in civil law countries which supports the view that they are classified as countries with a high standard. [14]

2.5 Robustness of the results

The objective of this section is to examine the robustness of the results presented in Section 2.3. Indeed, some of the assumptions made may not apply in all situations. Three of them are discussed in this section: (i) The claimant bears the burden of the proof, (ii) the defendant makes the settlement offer, and (iii) each party bears its own trial costs.

Reversing the first assumption leads to a modification of the informational structure of the game. Indeed, bearing the burden of proof in this setting means having a private information concerning evidence that will be presented to the adjudicator. By shifting the burden of proof, the public authorities are able to transfer this informational advantage. A change in the second assumption modifies the order of play, which may affect the possibility of a party to send a signal to his opponent. From a methodological point of view, these two assumptions may have an important effect on the game proceedings because they determine the type of equilibrium (signaling versus screening) and the role of each player. The modifications induced by a change in these two assumptions is first described. The effect of a change in the costs allocation rule on the equilibrium is then examined.

14. However, the award is negatively correlated to the threshold standard. If damages are higher in common law countries (which may be the case due to the possibility courts have to award punitive damages), this may offset the positive effect of trial costs on the threshold.

Burden of proof and order of play

The first result emerging from the initial framework is that a high standard of proof is associated with a low claim probability (see Result 1.1 and Figure 25 (b)). However, when the burden of convincing the court is shifted to the defendant, this result is overturned. Indeed, in general terms, a high standard of proof decreases the burdened litigant's probability of success as long as this latter has to prove the facts. Therefore, if it is the defendant who bears the burden of proof, then a higher standard turns out to be favorable to the claimant. This latter is more likely to file suit as the standard of proof goes up.

Nevertheless, the finding that there is a negative relationship between the standard of proof and the claim probability is quite robust to the order of play during the negotiation process. If the claimant (who is burdened litigant) initiates the negotiation rather than the defendant, results do not contradict the initial ones. With this signaling setting, a pooling equilibrium may happen in which all claimants decide to sue for low values of the standard of proof. Regarding the other possible equilibria, two configurations are possible: Either the claim probability is equal to unity, or it is inferior to unity meaning that low-type claimants may refrain from initiating a claim. In the latter case, the claim probability decreases with the standard of proof if low-type claimants never file a suit (separating equilibrium) and also if they file a suit with a given probability (semi-separating equilibrium). This is in line with the Result 1.1 since it suggests that the claim probability cannot be increasing with the standard of proof when the burden of proof is on the claimant.

Regarding the probability of settlement, it has been shown that litigants always reach an agreement when the standard of proof is low while the settlement probability is lower

when the standard is more stringent (Result 1.2). Moreover, the settlement probability is increasing with the standard of proof when this latter takes high values (see Figure 25 (b)). This result is reasonably robust to a change in the burden of proof or in the order of play.

If the burden of proof is shifted to the defendant, the sequence of the game is the same as previously but the defendant becomes the informed player and may send a signal to the claimant toward his settlement offer. The situation is quite similar if the second assumption is reversed: When it is the claimant who asks for an amount of compensation (and if the burden of proof stays on the claimant), the settlement demand made by the claimant may convey some information on evidence he possesses. Hence, if only one of these two assumptions is changed, both games are similar because the informed player speaks at first during the negotiation process. The two games display a large number of sequential equilibria, [15] but one may draw some general features about the relationship between the standard of proof and the settlement probability.

The two new settings lead to results that are consistent with the Result 1.2. This is the case first because there always exists a pooling equilibrium in which parties always reach an agreement, and such an equilibrium may occur only for low values of the standard of proof. [16] There also exists some other equilibria: A separating equilibria may occur, in which the low-type defendant (resp. claimant) proposes a high (resp. low) agreement, and vice versa. [17] Some semi-separating equilibra are also possible in which low-type defendants adopt a mixed strategy and high-type defendants benefit from a favorable settlement. In case of a separating or a semi-separating equilibrium, the settlement probability increases

15. See Reinganum and Wilde (1986) for the resolution of such a game.

16. It should be noted that these equilibria support the intuitive criterion (Cho and Kreps, 1987) but not the divinity criterion (Banks and Sobel, 1987).

17. For the same reasons as stated in Section 2.2, such an equilibrium holds only if the litigant who receives the signal adopts a mixed strategy.

with the standard of proof, as in the initial framework. [18]

Results are even closer to those of the initial setting when the two assumptions are reversed at the same time *i.e.* when the defendant bears the burden of proof and the claimant makes the settlement demand. In this case, the defendant is the informed player and the move sequence of the game is the following: 1. P decides whether to sue in which case he makes a settlement demand. 2. D accepts or rejects the demand. This is a screening game since the informed litigant only plays at the end of the game. [19] Again, it can be shown that parties settle for low values of the standard of proof. [20] This is the case because the claimant's probability of success is low when the standard is high since the defendant can easily support his position. Hence, the uninformed claimant demands a low compensation to make sure that it will be accepted. By contrast, for high values of the standard of proof, the claimant demands a high compensation which is accepted only by low-type defendants. In this respect, the settlement likelihood is equal to the probability that the defendant lacks evidence $G(\lambda)$, which increases with the standard of proof.

18. There may be some equilibria in which the settlement probability is independent from the standard of proof when claimants make settlement demands and when low-type claimants refrain from suing defendants (a necessary condition is that $C_d < F$).

19. See Bebchuk (1984) for the resolution of such a game.

20. It is subject to the condition that P has sued D, which is the case if $C_d > F$. Indeed, P knows that he can at least reach an agreement for an amount C_d. D always accepts such an offer since he will have to pay C_d in case of trial. Thus, P decides to sue when D's trial costs exceed P's filing cost.

The English Rule

It has been assumed that each litigant bears its own litigation costs. This norm is called "the American Rule". Many other countries have adopted the "English Rule" which requires the losing party to pay the winner's legal fees. Modifying the allocation of the cost does not change the main result of the model. Results are similar except that the threshold that separates the "low standard" from the "high standard" case (denoted $\bar{\lambda}$ in the basic model) is lower.

3 Discussion

This section aims at confronting the results of the model with some empirical facts. The model predicts that, when the burden of proof is on the claimant, propensities to claim and to negotiate are higher in countries with a relatively low standard of proof. Given that the standard of proof is much higher in civil law than in common law countries, the model suggests that Anglo-Saxon countries should be characterized by higher propensities to claim and to settle.

3.1 Propensity to sue

The mere fact that victims bring suit to get compensation is not harmful in itself. The issue is to establish to which extent the number of lawsuits is disproportionate. Answering this question requires to assess the share of claims that are fraudulent, which is an ambitious task. Besides the fact that there are a multitude of ways of defining a frivolous claim, difficulties may arise in distinguishing empirically meritorious from frivolous claims. Indeed,

it would be necessary to establish a threshold (for example, in terms of success probability if one follows Katz's (1990) definition of a frivolous claim) that separates the two types of claims. The border between frivolous and meritorious claims is porous thus making it almost impossible to gather data on frivolous claims.

Despite the difficulty of capturing the reality of this phenomenon, it is possible to estimate its scope. To this end, I compare the number of claims in proportion to population in France and in the United States using public data. I first consider all civil cases before focusing on tort cases. By adding up the approximative number of civil cases in State courts and in federal courts (District and Bankruptcy courts), I find that there were around 7,900 incoming cases in 2013 in the USA for 100,000 inhabitants. By way of comparison, there were approximately 3,800 incoming cases in France the same year for 100,000 inhabitants.[21] Thus, the US propensity to sue appears to be more than twice superior to that in France.

To add some light on this issue, I compute the number of tort claims in proportion to population in the same two countries. In France, there were 54,924 incoming tort cases in 2010,[22] which corresponds to around 85 incoming cases for 100,000 inhabitants.[23] In the USA, tort cases are essentially brought before State courts. The number of tort cases for

21. See the Table 3 in the general introduction to have the details and the sources of these figures.

22. The Annuaire Statistique de la Justice (édition 2011-2012) contains the details of incoming cases for each type of litigation (Annuaire, Edition 2011-2012). Thus, 6,702 incoming tort cases were brought before appeals courts, 36,223 before high civil courts ("Tribunaux de Grande Instance"), 11,788 before small claims civil courts ("Tribunaux d'Instance") and 211 before commercial courts ("Tribunaux de commerce"), bringing the total to 54,924 incoming tort cases in 2010.

23. According to the French National Institute of Statistics (INSEE), the population on January 1, 2010 amounted to 64,612,939 inhabitants. Source: `http://www.insee.fr/fr/themes/series-longues.asp?indicateur=pop-debut-annee`

100, 000 inhabitants in the different US states, made public by the Court Statistic Project, is reported in Figure 26 for the year 2014. [24] Only 4 out of the 26 states for which data are available display a number of tort claims below that observed in France. Indeed, most states display between 100 and 200 incoming tort cases per 100, 000 inhabitants, and the median is 141. Some states, including New Jersey (794), Connecticut (403) and Maryland (394), display a higher number of tort cases. Moreover, it should be noted that the number of tort claims per 100, 000 inhabitants is underestimated in the USA because it excludes cases brought before federal courts. [25]

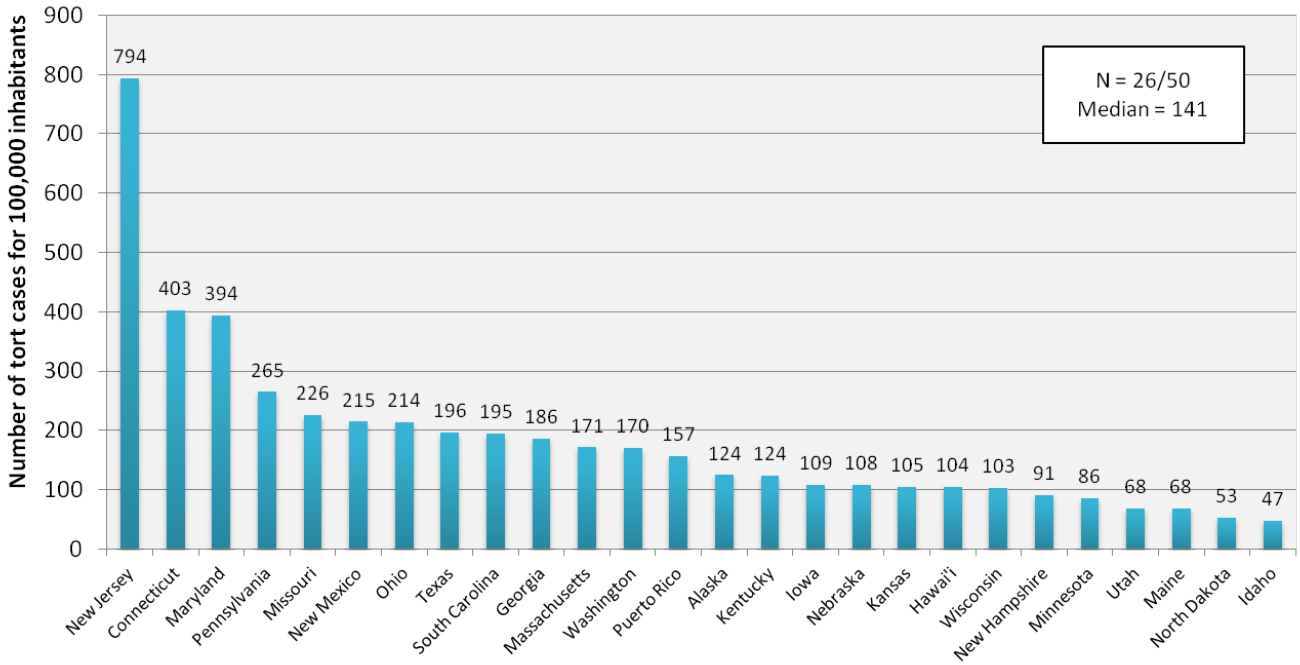


FIGURE 26 – Number of tort claims in US State courts

24. Source: http://www.ncsc.org/Sitecore/Content/Microsites/PopUp/Home/CSP/CSP_Intro

25. To give an idea of the magnitude of federal cases, 72,011 tort cases were brought in federal courts in 2008. http://www.uscourts.gov/Statistics/JudicialBusiness/JudicialBusiness2009.aspx (see table C-2A).

Finally, I compare France and the USA with respect to the number of incoming medical malpractice claims. As we shall discuss later in this section, this type of litigation is one of the most emblematic case with respect to frivolous claims. Thus, if one considers only medical malpractice litigation, the number of incoming cases lies between 1.5 (Wisconsin) and 11.8 (New Jersey and Pennsylvania) in US states, with a median equals to 6.8.[26] In France 2,383 incoming medical malpractice cases were filed in 2010, which corresponds to 3.7 incoming cases for 100,000 inhabitants.[27]

These statistics are summarized in Table 9. They suggest that the propensity to sue is higher in the US than in France. This statistical approach gives an idea of the extent to which citizens recourse to the judge. However, it does not allow to determine whether the higher claims-to-population ratios in the US stems from more numerous frivolous or meritorious claims. As a complement to this short analysis, it is worth mentioning the debates that have taken place for several decades as well as policies that are pursued in the US, in the UK and in France. This gives some indications about the magnitude of frivolous litigation in each of these countries.

26. Data are available only for 15 US states. Source: `http://www.ncsc.org/Sitecore/Content/Microsites/PopUp/Home/CSP/CSP_Intro`

27. According to the French Ministry of Justice data, 647 incoming tort cases were brought before appeals courts, 1,569 before high civil courts ("Tribunaux de Grande Instance") and 167 before small claims civil courts ("Tribunaux d'Instance") in 2010 (Annuaire, Edition 2011-2012).

28. Statistics on civil cases are for the year 2014 in the USA and in France.

29. Statistics on tort cases and on medical malpractice cases are for the year 2010 in France and for the year 2014 in the USA. For tort cases (resp. medical malpractice cases), the median is computed for the 26 (resp. 15) states for which data are available. It excludes cases brought before federal courts.

	USA	France
Civil cases [28]	7,922	3,808
Tort cases [29]	Median: 141	85
Medical malpractice cases	Median: 6.8	3.7

TABLE 9 – Number of incoming cases per 100,000 inhabitants

In the United States, the volume of litigation is a recurrent question since the Roscoe Pound Conference of 1976. This conference aimed at finding ways to address popular dissatisfaction with the American legal system and to reform the administration and delivery of justice. The issues of the costs and delays of the judiciary were at the heart of the debates. [30] In 1992, Walter Olson has reported in a reference book a situation of "litigation explosion". More recently, some scholars have argued that evidence of the growth in civil litigation is accumulating (Johnston, 2007).

Particularly noteworthy is that this trend is widely attributed to the growing number of frivolous claims. The advocates of a tort reform have constantly criticized frivolous litigation as a cause of the sharp rise of the judiciary's cost. This perspective has been largely covered by the medias which have highlighted some (apparently) meritless cases that have become very famous. The most legendary case is probably the McDonald's coffee

30. The conference has been named Pound in honor of Professor Roscoe Pound who had delivered a famous paper in 1906 entitled "The Causes of Popular Dissatisfaction with the Administration of Justice".

case which has given rise to an annual award of the most frivolous lawsuit in the US. [31] There are now many voices calling for a tort reform to eliminate lawsuit abuses and reduce the tort cost. This viewpoint is conveyed by the American Tort Reform Association that lobbies in favor of a legislation that would reduce lawsuits abuses, which are said to be one of the biggest thorns in the US judicial system. This state of affairs has been challenged by some scholars, and most notably by Marc Galanter (Galanter, 1986, 1988) who bases his analysis on empirically studies to refute such claims.

The issue of frivolous litigation has been taken seriously by the lawmaker. In the US, the legal system tries explicitly to curb frivolous suits notably through the Federal Rules of Civil Procedure which states that attorneys have to certify that "the claims [...] are warranted by existing law or by a non-frivolous argument [...]" (Rule 11). Furthermore, the judge has to eliminate frivolous claims during the pretrial conference (Rule 16). During his mandate, President Bush has routinely blamed on frivolous claims about medical malpractice. [32] He has proposed different tort reforms in particular to reduce the number of frivolous claims on medical malpractice but the Senate prevented the enactment of such legislation. In addition, a range of initiatives have been launched at state level. For example, a tort reform was adopted in Texas in 2003 which has led to a 60% drop in claim rates (Paik et al., 2012).

31. Stella Liebeck, 79-year-old, has filed a claim against McDonald's in 1992 after having spilled hot coffee on herself. She suffered third-degree burns and was hospitalized for eight days. After McDonald's had refused to pay her $20,000, the jury awarded her $160,000. Some commentators have highlighted that the claim is not so meritless. The coffee was served at approximately 190 degrees Fahrenheit and the company confessed that it had never considered the safety issues. Several hundreds of consumers had already filed claims and had settled out-of-court for amount as high as $500,000.

32. "What's happening all across this country is that lawyers are filing baseless suits against hospitals and doctors... They know the medical liability system is tilted in their favor.". This is a speech of the US president Georges W. Bush (January 2005) cited by Hyman and Silver (2006).

There are also lively discussions in the UK, where "newspapers complain that the UK is becoming like the United States with stories of people apparently suing others for large sums of money, and often for what appear to be trivial reasons". [33] Some commentators and politicians argue that a compensation culture has developed over the last decades. The institute of actuaries has estimated that the compensation culture costs around £10 billion a year and that this cost is increasing each year. Furthermore, the cost to insurers of compensating personal injuries seems to follow an upward trend suggesting that the propensity to claim is getting higher and higher. [34] An academic study shows using several reliable datasets that the number of personal injury claims pursued through the tort system has significantly increased in the last thirty years in England and Wales (Morris, 2007). The debate is far from being closed, partly because of the difficulty to empirically estimate unfounded claims. However, like in the US, this issue has been dealt by the government. To reduce the number of spurious claims, the regulation of the claims management market has been reinforced: Firms are required to comply with a code of conduct and to obtain an autorization to enter the claims management market. [35]

In France, the issue of the volume of litigation has been introduced in the public arena mainly because of the increasingly lengthy delays. Indeed, France is one of the European

33. Extracted from the foreword of the report "Better routes to redress" by Better Regulation Task Force, May 2004.

34. "The cost to UK motor insurers of compensating for personal injuries arising out of road accidents has shown an average increase of 9.9% per annum over the last decade, with the cost of claims against the National Health Service arising out of negligent hospital treatment increasing at a similar rate." (Ibbetson, 2005)

35. Compensation Act of 2006.

countries which is the most condemned by the European Court of Human Rights for violation of the right for a fair hearing (Article 6-1 of the European Convention on Human Rights) on the ground of unreasonable delays. [36] The public authorities have been working to tackle this issue partly because of the crisis of confidence this phenomenon may generate (Cadiet, 1999). Two official reports have been commissioned to find ways of mitigating legal delays (Magendie, 2004, 2008). [37]

These reports, like other works, [38] address the following question: How the judiciary can adapt to the increase in litigation by managing at best the time allocated to different tasks? It appears that excessive delays are attributed to the lack of organization and/or of means that suffer judicial institutions. The concept of "judiciarization" is more and more often mentioned in debates, but claimants are not considered as abusing the system. [39] Quite the contrary, the judiciarization is legitimated by the withdrawal of the state: The judiciary is viewed as a substitute to the political power when this latter is deficient. Medical malpractice litigation is one of the few areas in which the issue of abusive claims has

36. See the report of the European Commission for the Efficiency of Justice entitled "Length of court proceedings in the member states of the Council of Europe based on the case-law of the European Court of Human Rights (state as at 31 July 2011)". The report highlights that only Italy and Turkey have been the subject to more judgments finding a violation of the Convention for unreasonable delays than France.

37. The first report (2004) copes with the first instance procedure while the second one (2008) concerns the appeal procedure.

38. See Jacques Normand, "Le traitement de l'urgence : exception ou principe ?", in: Réforme de la justice, réforme de l'Etat, sous la direction de Loïc Cadiet et de Laurent Richer, 2003.

39. This term reflects the tendency of the judiciary of being increasingly used as a mean to regulate social and economic relations. Thus, the judge has an expanding role within different areas like the areas of economics, politics, or health. See the report entitled "La judiciarisation de la santé" (Laude et al., 2011) and the report of the French "Conseil Economique et Social" entitled "La judiciarisation de l'économie" (Noury, 2004).

been addressed. Indeed, some scholars highlight the volume of medical malpractice litigation as an explanation of the increase of insurance premium paid by medical professionals (Lansac and Sabouraud, 2004). However, the data do not allow to confirm this statement (Helmlinger and Martin, 2004) and there is still no consensus about a litigation crisis, even in the medical malpractice field.

Overall, the question of frivolous litigation is rarely explicitly brought forward in the French debate, and political recommendations focus on the supply-side of justice rather than on the demand-side. Regarding the legislation, it should be noted that a defendant can bring a claim against the initial claimant to obtain compensatory damages if he considers himself as a victim of a frivolous claim.[40] However, this implies a new procedure and it is generally difficult for the the initial defendant to prove the facts. Thus, the court does not have a specific role to discourage unfounded claims contrary to what happens in the USA. In the USA, and to a lesser extent in the UK, victims are blamed to be too inclined to sue when they have been harmed. This was made explicit by the review of political and media debates, and it is also supported by some scholars. Furthermore, the fact that this issue is tackled by the lawmaker reinforces the belief that frivolous litigation is a real issue in these countries.

3.2 Propensity to settle

The individuals' propensity to settle has increased over time as a result of the "Alternative Dispute Resolution movement" that has developed worldwide since the 1980's. This trend, described by some scholars as a "quiet revolution" (Stipanowich, 2004), has com-

40. Art. 32-1 of the French Civil Procedure Code. This article applies to the civil procedure at first instance but other comparable procedures are provided by the law for other situations.

pletely modified the judicial landscape. Many initiatives throughout the world have been launched to promote and favor the use of ADR. Behind this expression is a wide range of dispute resolution mechanisms. The most well-known are arbitration, mediation and conciliation but many other procedures exist. [41] Common to them all is that the dispute does not end up with an adjudication. Among various types of ADR a distinction can be drawn between court-connected ADR mechanisms —which operate within the judiciary— and private ADR mechanisms like arbitration. [42] Even if legal initiatives have been launched in the USA, in the UK and in France, ADR programs have developed in different ways, and to varying degrees in these countries.

In the USA, the "ADR movement" has its origin in the Pound Conference that has taken place in 1976. On this occasion, the Harvard Law Professor Frank Sander —now considered as a pioneering leader of the ADR movement— has insisted on the necessity to recourse to alternative ways of resolving disputes. He has introduced the concept of "multi-door courthouse" to promote the idea that courts should be able to find the most efficient way of ending each litigation. Many procedural reforms have taken place following the Pound conference. In 1990, the Congress passed the Civil Justice Reform Act (CJRA). [43] The CJRA has applied the conclusions reached at the Pound Conference by promoting the use of ADR services: It has encouraged federal District courts to explore the possibility of a settlement and to direct the parties toward ADR mechanisms like mediation, mini-trial

41. See Stone (2005) for a description of the main types of ADR in particular in the USA (mini-trial, summary jury trials, court-ordered arbitration, ombudsman, med-arb, small claims court, rent-a-judge, etc.).

42. In the previous model (see Section 2), I have focused on the first category of ADR mechanisms.

43. 1928 U.S.C.§§471-482 (1990).

and summary jury trial.[44] This trend has then been reinforced through the Alternative Dispute Resolution Act of 1998 which requires each District court "to authorize [...] the use of ADR processes in all civil actions".[45] In addition, State courts have implemented many programs to provide ADR services since the beginning of the 1990's (Stipanowich, 2004).

In England and Wales, two major reforms have promoted the use of ADR (Mistelis, 2003). The Arbitration Act of 1996 has formalized the process of arbitration and conciliation. Moreover, the Woolf report published in 1996 has recommended to give a more active role to judges in particular during the pretrial process: Judges should be able to select the best way of resolving a dispute (Woolf, 1996). As in the USA, the objective was to reduce the costs and delays of the judiciary. This report was followed by the reform of the Civil Procedure in 1999. Judges have now to encourage parties to use an ADR procedure and even to facilitate by themselves a settlement (Roberts, 2000).

The French public authorities are also willing to promote settlements. The expression "Modes Alternatifs de Résolution des Litiges" (MARL) has appeared in the 1990's as an equivalent of "Alternative Dispute Resolution". Even if MARL have developed quite recently, some scholars note that this phenomenon is not recent (Cadiet, 2011). The Napoleonic Civil Code of 1804 provided a mandatory conciliation process for civil cases. The share of successful conciliations has then declined by the end of the 19th century, which has led the lawmaker to remove this obligation from the Civil Code in 1949. However, the Labor Code still provides the obligation to conciliate before the adjudication process.

44. Some scholars regret that the CJRA has taken for granted the idea that only costs and delays can be an explanation of the dissatisfaction toward the judicial system, without seeking the causes of these costs and delays. See Reda (2012) who speaks of a "cost-and-delay narrative".

45. 2028 U.S.C. §§651-658 (1998).

Moreover, civil judges have the possibility to conciliate parties (Art. 21 of the French Civil Procedure Code). Despite this, the use of MARL has remained low, which has resulted in several initiatives from the 1990's to promote their use. The Law of 4 February 1995 has institutionalized the practice of mediation. Some judges have taken this opportunity to use mediation within their own court.[46] More recently, two substantial reports have called for the development of such techniques (Guinchard, 2008; Magendie, 2008). They have recommended to extend the competences of judges and even to make compulsory the recourse to mediation in some particular cases, like family cases. Moreover, a European directive came into effect in June 2008 to encourage Member States to develop ADR.

Although many initiatives have been taken in France to promote ADR in recent decades, there wasn't a general movement toward it. Alexander (2002) points out that ADR methods have experienced rapid growth in common law countries while civil law countries seem reluctant to use them. This is in line with the analysis of Haravon (2010) who estimates that 3% of the claims are adjudicated in the UK and in the US while more than 75% of claims are heard in France. To complete this analysis, I present some statistics related to the propensity to settle in France, in the UK and in the USA. They confirm this view and suggest that the ADR movement is slow to be adopted in France while it has now become an integrated part of the UK and US judicial systems.

In France, the statistics published by the Ministry of Justice suggest that the majority of claims are heard by trial judges. In 2014, 79% of claims brought before High Civil Courts ("Tribunaux de Grande Instance") and 74% of claims brought before Small Claims Civil

46. Béatrice Blohorn-Brenneur, President of the Labor Chamber of the Grenoble Court of Appeal, has successfully worked to develop mediation from 1996 (Chappe and Doriat-Duban, 2003).

Courts ("Tribunaux d'Instance") ended up with a trial.[47] This trend does not disappear when one considers cases for which parties must try to conciliate, like labor disputes.[48] In 2013, such mandatory pretrial negotiations were successful in 10,250 out of 155,254 cases that were disposed of, which is less than 7%.[49] Taking into account the cases where claimants withdraw their complaint, the settlement rate goes up at less than 17%.[50]

The settlement rate may be much higher in UK, because the number of heard cases is significantly lower than in France. According to the UK Ministry of Justice, 1,553,983 cases started in county courts in 2011 and there were 52,660 trials and small claims hearings the same year.[51] Thus, 3.4% of the cases finally access to the judge. Complex and substantial cases are dealt with the High Court. 35,238 claims were originated at the High Court's Chancery division in 2011, but there were only 4,034 cases received for hearing (11%). 4,726 claims were issued at the Queen's Bench Division (figures only include the Royal Courts of Justice) and 193 were heard (4%).

Regarding employment claims, the conciliation rate also reaches higher levels in UK than in France. The statistics of the Ministry of Justice report that UK employment tribunals disposed of 230,000 complaints from 1 April 2011 to 31 March 2012, among which 33% ended up with an ACAS settlement,[52] 27% were withdrawn (which can also be viewed as

47. See Section 1.1 of Chapter 2, Figure 27.

48. Parties have to go at the conciliation office before the case is adjudicated (Art. L1411-1 of the Labor Code).

49. The conciliation rate has dropped between 2013 and 2014 to reach 6.2% in 2014. It can be estimated at 17% in 2014 if one includes the number of withdrawn claims. See Chapter 2, section 1.1.

50. In 2013, claimants have withdrawn their claim in 15,384 out of 155,254 cases. All statistics are available on the website of the French Ministry of Justice (`http://www.justice.gouv.fr/statistiques.html`).

51. In England and Wales, the vast majority of civil cases are handled by county courts.

52. The ACAS is a public institution aiming at promoting ADR in the UK.

a form of settlement) and 13% were struck out. [53]

Galanter (2004) has shed light on the decline of the share of cases that end up with a trial in in the US. Indeed, the statistics published in the Judicial Business Report show that only 1.18% of claims brought before District Court are heard. [54] The majority of cases (64%) end up without any court decision, and 35% end up with a court action prior to the trial, thus suggesting a high settlement rate. With regard to State courts, a study using a sample of 5% of the total civil caseload shows that 26% of terminated cases were heard by the judge between July 1, 2012 and June 30, 2013 (NCSC, 2015b). Even if the remaining cases are not necessarily settled, it suggests that parties are much more prone to conciliate than in France.

4 Conclusion

This chapter analyzes how the standard of proof affects the volume of litigation using a pretrial litigation model. The model shows that lawsuits are more frequent with a high standard when the claimant bears the burden of proof. If the burden is on the defendant, one may expect fewer civil actions when the standard of proof is low. Moreover, pretrial negotiations are shown to fail more often when the standard of proof is stringent regardless of the allocation of the burden of proof.

In the discussion, an effort has been made to confront these theoretical results with some empirical observations. In civil law countries, where the standard of proof is very high, individuals are less likely to bring a claim when they face a litigious situation, but

53. Source: `https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/218497/employment-trib-stats-april-march-2011-12.pdf`

54. See Chapter 2, Section 1.1 for the detail of the statistics mentioned related to US courts.

they are also less likely to settle. Common law countries display a lower standard of proof and the claim rate, as well as the settlement rate, are higher. These observations are in line with the results of the model, suggesting that the standard of proof may be part of the explanation for differences in individuals' litigation-related behaviors. In particular, this sheds some lights on the reasons why the ADR movement is slower to be adopted in civil law countries.

From a welfare perspective, the volume of litigation is a major determinant of the cost of justice. In this respect, the model points out the existence of a trade-off —when the claimant bears the burden of proof— between minimizing the number of baseless claims and maximizing incentives to settle. The overall effect of the evidentiary standard on the judicial cost thus depends on the magnitude of both effects, and on the administrative cost of a claim relative to that of an hearing.

2 Discovery of Evidence and Incentives to Settle

1 Introduction

1.1 Motivation

This chapter examines, in a comparative perspective, the effect of the rules governing the discovery of evidence on parties' propensity to settle prior to the trial. It aims at developing understanding of the difference in settlement rates between common law and civil law countries. For this purpose, the focus is on France as compared to the United States. In France, many public reports have recommended to develop Alternative Dispute Resolution (ADR) methods for many years,[1] and have resulted in several procedural reforms. Yet, the conciliation rate remains quite low. According to the figures published by the French Ministry of Justice, between 1% and 3% of civil cases initiated before ordinary lower civil courts (excluding employment and commercial cases) end up with a conciliation

1. For examples, see Guinchard (2008), Magendie (2004) or more recently Delmas-Goyon (2013) and Marshall (2013).

(see Figure 27.). [2] Moreover, claimants withdraw the charges before the trial in 7% of cases for small claims, and in 9% otherwise. Such decisions may result from an agreement with the adverse party, or should be considered as such. It could therefore be assumed that the settlement rate lies between 1% and 8% in small claims ordinary courts, and between 3% and 12% in high civil courts. [3] Considering employee claims courts, the conciliation rate reaches 6%, and can be estimated between 6% and 17% if withdrawals are partly included. However, it should be noted that the conciliation rate, as registered in courts statistics, is declining from 9.86% in 2004 to 6.20% in 2014. [4]

In the United States, the 1976 Pound Conference has marked the beginning of the so-called "ADR movement". Since then, ADR have grown in popularity and these methods seem to be widely accepted as alternatives to judicial litigation. It is commonly agreed that parties are more prone to settle prior to the trial in the USA rather than in France. To confirm this statement, some statistics on US State courts and District courts are reported in what follows. [5] No data is available on the outcome of cases in State courts, but a

2. High civil courts ("Tribunaux de Grande Instance") are ordinary civilian courts and are seized when the stake exceeds 10 000 euros. Small claims civil courts ("Tribunaux d'Instance") have competence when the stake is lower, and employee claims courts ("Conseils de Prud'hommes") decide cases related to Labour Law. These statistics are computed on the basis of the number of terminated and conciliated cases published by the French Ministry of Justice. They are available online: `http://www.justice.gouv.fr/statistiques.html`. Taken together, these three courts deal with the vast majority of civil cases in France.

3. The category "others" appearing on Figure 27 encompasses several methods of disposition ("jonction, radiation, retrait du rôle, caducité, irrecevabilité, incompétence") that are imposed on claimants, which do not correspond to a settlement.

4. The conciliation phase is compulsory before the case is adjudicated, which is rarely the case for other types of disputes.

5. The vast majority of civil cases are filed in State courts (16.9 millions cases in 2013), compared to 259,489 cases in District Courts (NCSC, 2015b; p. 6).

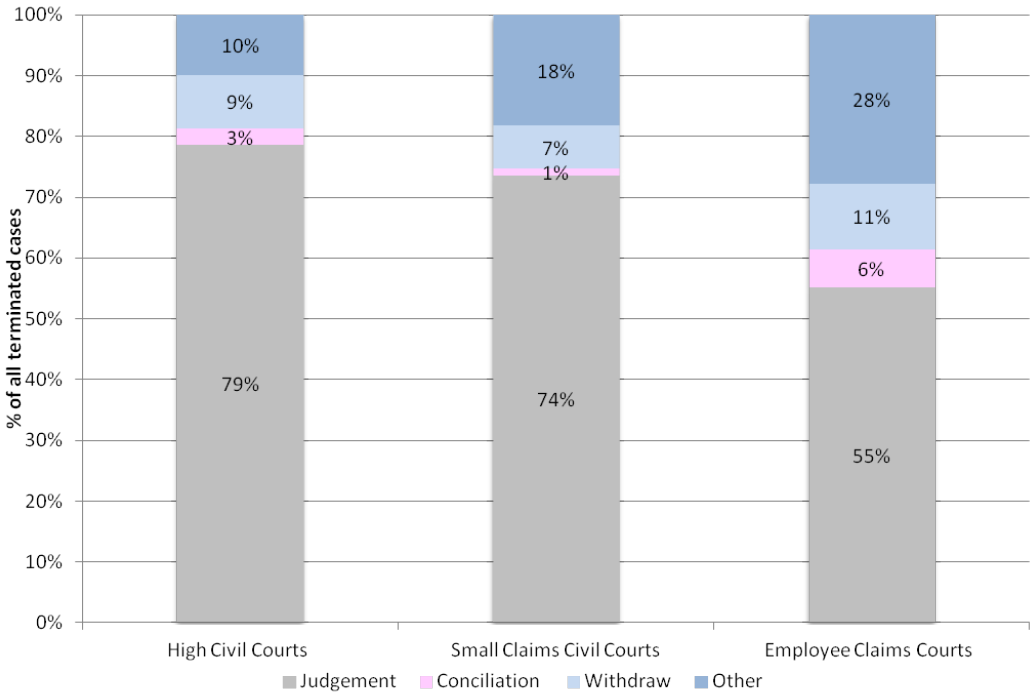
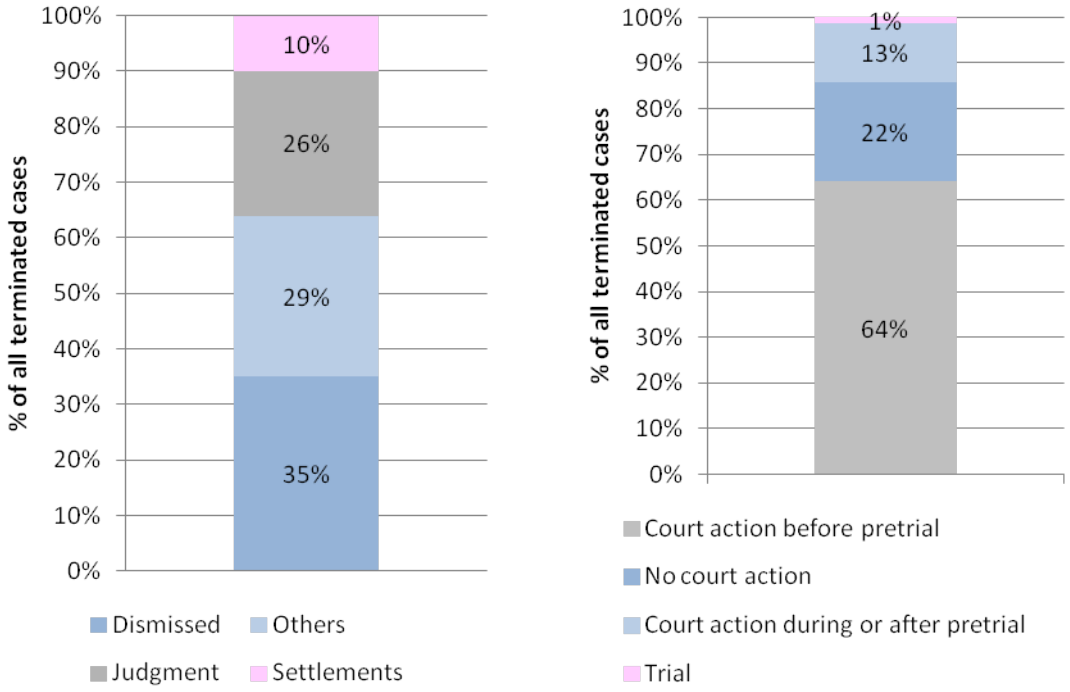


FIGURE 27 – Disposition of civil cases in France

recent study deals with a sample of 152 State courts representing 5% of the total civil caseload. [6] According to this study, the settlement rate is around 10% in State courts (see Figure 28 (a)), which appears surprisingly low with regard to a 1992 similar study that reports a settlement rate of 62%. The authors attribute this difference in particular to the evolution of the coding methodology employed in courts. They point out that litigants generally "request that settled cases be dismissed with prejudice to preclude the plaintiff

6. This study is published by the National Center for State Court (NCSC, 2015b) and examines cases disposed from July 1, 2012 to June 30, 2013 (`http://www.ncsc.org/~/media/Files/PDF/Research/CivilJusticeReport-2015.ashx`). The category "others" encompasses "default judgment", "unknown", "Adjudicated Disposition", "Other Disposition" and "Summary Judgment". The authors insist that the disposition descriptions may vary between courts. Therefore, these figures should be considered with caution.



(a) State Courts

(b) District Courts

FIGURE 28 – Disposition of civil cases in the USA

from refiling the case in the future." Thus, it seems reasonable to account, at least to some extent, for the percentage of cases that are dismissed, which corresponds to a settlement rate lying between 10% and 45%. [7]

These statistics only give an approximative view of the settlement rate, because of the difficulty to interpret precisely the different methods of disposition. However, what clearly emerges from the data is that cases are more likely to be adjudicated in France (between 55% and 79% in the three courts studied, see Figure 27) than in USA (26%, see Figure 28 (a)). This fact is even more significant when considering District courts in which only

7. It should be noted that the reported settlement rate strongly varies according to the type of case, from 2% for small claims to 32% in case of a tort dispute.

1.18% of all terminated cases end up with a trial (see Figure 28 (b)). [8] This observation has led Galanter (2004) to speak of the "vanishing trial" to describe the situation in the USA. This appears as a salient difference between France and the US, and it creates a strong presumption that the settlement rate is much higher in the US.

Even if there is a broad literature on negotiations failures, [9] more studies are needed to identify the factors that cause the difference in parties' incentives to negotiate across countries. To this respect, the US discovery is often mentioned as one of these factors. It refers to a number of procedural devices that give litigants the opportunity to obtain information and documents from their adversary during the pretrial phase. [10] Promoting settlements is one of the stated goals of the US discovery (Cooter and Rubinfeld, 1994). The exchange of information should reduce informational asymmetries as well as parties' optimism, therefore encouraging parties to settle. However, the US discovery is subject to controversies and is blamed for increasing dramatically the cost of litigation (LCJ, 2010). Against this background, it is essential to assess whether the objectives of the US discovery are met.

This chapter also aims at including some specificities of the civilian tradition into the analysis in order to complement the existing literature which is essentially oriented toward the US discovery rule. In civil law countries like France, there also exist some rules governing the discovery of evidence and giving to litigants the possibility to implement some investigative measures against their opponent. However, the civilian rules differ in

8. Source: `http://www.uscourts.gov/statistics-reports/judicial-business-2015`, table C5. The latest available data apply on cases terminated between October 1st, 2014 and September 30, 2015.

9. See Section 3.2 of the general introduction.

10. The discovery applies more generally under the common law and is known as "disclosure" in England and Wales.

some respects, especially regarding the more active role given to the judge and the scope of the discovery, much more limited. These are the main reasons why the methods of gathering evidence are often considered as a striking feature opposing the common law to the civil law tradition (Thieffry, 1984; Pejovic, 2001). This institutional difference may explain why parties are more prone to settle in the US than in France. Specifically, the higher settlement rate in the US seems to indicate that the US discovery succeeds in its purpose of promoting settlements. However, to my knowledge, there is no paper comparing the two traditions to confirm this idea, except Huang (2009) who focuses on the case of Taiwan. This chapter aims at providing some arguments to discuss such a claim.

To achieve these goals, I first compare the rules governing the gathering of evidence applying in the US and in France. Subsequently, I study the effect of these rules on parties' incentives to find an agreement with the adverse party. The distinction is made between incentives to settle *after* and *before* the discovery. In the former case, all pieces have been discovered and the next step is the hearing. In the later case, parties have examined the discovery rule and they know whether they are allowed to request the production of some pieces from their adversary (or whether their adversary is allowed to do so), but pieces have not been revealed yet. In both cases, a particular attention is paid to the asymmetries of information between parties and to the optimistic bias that might affect them, robustly identified as potential causes of negotiations failure in the literature.

1.2 Main results

A literary analysis of the applicable procedural rules leads to the conclusion that the differences between the US discovery and the French procedure cannot explain the highest settlement rate in the USA if one considers negotiations occurring after the discovery. The

main argument is that all pieces have to be known by both parties before the hearing to be taken into consideration by the court. This is the case in the two countries studied. In addition, the US rules allow the discovery of inadmissible pieces, which is not the case in France. I will argue that it is likely to introduce a divergence in litigants' expectations on the outcome of the case in the US, therefore impeding negotiations. Indeed, parties have to estimate the probative value of the discovered items, which is a difficult task since admissibility rules are complex and they are subject to the interpretation of the court. This effect is strengthened by the fact that parties devote an unequal effort to win the trial. Finally, the US discovery is likely to amplify the negative consequences of two types of informational asymmetries: First, the asymmetry of information on legal expenses may play a greater role in the USA due to the higher expected discovery cost faced by litigants. Second, by giving a more active role to attorneys, the US discovery may also increase the effect of informational asymmetries between litigants and their attorneys, which is less the case in France where the judge plays a more active role. This may impede negotiations if attorneys have incentives to litigate rather than settle.

The difference in settlement rates between France and the USA may be better understood when considering the case of negotiations occurring before the discovery. By this is meant that pieces have not been discovered yet, but parties know whether they are allowed to undertake investigative measures. At that time, parties may be overoptimistic and/or unequally informed concerning the existence of a piece supporting their claim. Two models are developed, building on Shavell (1982) to account for overoptimism and on Bebchuk (1984) for asymmetric information. They capture the two main specificities of the procedural rules governing the production of evidence opposing the two countries. First,

litigants have a higher probability to be allowed to request their adversary to discover some pieces in the USA than in France, which reflects the broader scope of the US discovery (*scope effect*). Second, parties' requests are selected by the judge according to their merit in France, while the US judge may restrict the discovery without his decision being linked to the quality of the pieces, but rather when proceedings become excessively expensive or time-consuming (*selection effect*).

Overall, the results indicate that parties may have more incentives to settle before evidence is produced under US discovery rules. This is a consequence of the two effects described above, the scope and the selection effects. First, within the perfect information framework, the discovery costs are higher in the US because more pieces are exchanged (scope effect). This increases the negotiation surplus and encourages parties to settle. However, it should be noted that the broader scope of the US discovery may impede negotiations when the claimant displays a strong optimistic bias or if he is less informed than the defendant concerning the existence of a piece of evidence. This comes from the fact that litigants always find an agreement if they cannot proceed with investigative measures, since variables on which they are unequally informed and/or overoptimistic no longer affect the outcome of the case. Thus, parties are more likely to settle if the claimant's request is more likely to be rejected by the court.

Second, the selection effect, by which parties are able exchange inadmissible pieces in the USA while the judge screens such requests in France, tends to amplify the negative effect of overoptimism and asymmetric information in France. If the litigant making the request is overoptimistic concerning the existence of the piece, his optimistic bias applies on a larger expected utility once the judge has accepted the request, which reduces the negotiation zone more than in the US context. If he is uninformed of the existence of the

piece, the acceptance of his request makes him more demanding during the negotiations, thus mitigating the likelihood of settlements.

1.3 Related literature

The discovery has been primarily studied as a tool allowing the sharing of information between parties during the pretrial phase. Since optimism and asymmetric information have been shown to impede negotiations,[11] one might expect the pooling of information between parties to increase the settlement rate. The theoretical and then empirical literature is reviewed in what follows.

Theoretical literature

Within the theoretical literature on the sharing of information, some papers deal specifically with the discovery. As one might expect, this literature highlights the positive effect of the discovery on the settlement rate. The papers attempting to model the discovery differ according to the informational structure of the game, the mandatory or voluntary nature of the discovery process and the cost of the discovery.

In the model of Sobel (1989), the discovery rule requires the defendant to reveal his private information, but the plaintiff also has a private information that remains private. Thus, the discovery only eliminates a part of the asymmetry of information. Theoretically speaking, the discovery induces a move from a double-sided asymmetry of information to a one-sided framework, and the probability of trial is strictly positive in both cases. The game is played as follows: The defendant makes a settlement offer to the plaintiff during

11. See the general introduction, Section 3.2.

the first stage of the negotiation. If the plaintiff rejects the offer, there is the discovery phase during which the defendant must reveal his private information. It is followed by a second stage of negotiation in which the plaintiff makes a counter-offer to the defendant. Within this framework, Sobel (1989) shows that the settlement likelihood is higher with the discovery than in its absence.

Shavell (1989) builds on Bebchuk (1984) by developing a model in which the defendant makes a settlement offer to the plaintiff who has superior information on the expected judgment. Contrary to Sobel (1989), Shavell (1989) introduces the discovery rule —whereby the defendant can require the plaintiff to share his private information— in a context of voluntary sharing of information. Moreover, a fraction of plaintiffs is assumed to be unable to credibly reveal their private information. [12] Under these assumptions, and without discovery, plaintiffs holding an unfavorable information always keep silent, while plaintiffs with a favorable information communicate if they can credibly do it. When the discovery rule applies, only plaintiffs who cannot credibly reveal their private information remain silent. Therefore, the uninformed defendant makes a higher offer to silent plaintiffs in presence of the discovery. Since cases always settle when plaintiffs communicate their private information, the settlement rate is higher with the discovery.

Farmer and Pecorino (2005) propose a more generalized framework than those previously mentioned. Both mandatory and voluntary discovery are studied and the plaintiff is assumed to have a private information concerning the level of damages. He can voluntary and credibly disclose his information at a certain cost and, if he does not, his adversary may invoke a mandatory discovery process at a cost incurred by both litigants. Moreover, Farmer and Pecorino (2005) consider a screening model in which the defendant makes the

12. This is the case in the second version of the model of Shavell (1989) that is reviewed here. Without this assumption, all cases settle with or without discovery.

settlement offer and a signaling model in which it is the plaintiff who makes the offer. The authors find that the two discovery procedures (voluntary and mandatory) are used in a complementary way and that they increase the probability of settlement. [13]

The discovery does not only facilitate settlements by reducing the asymmetry of information. It is also likely to mitigate the potential behavioral biases that affect litigants, and especially the optimistic bias, which is a cause of negotiation failures. [14] Cooter and Rubinfeld (1994) develop a model in which parties have divergent expectations. They show that the discovery helps to mitigate parties' overoptimism by reducing their expected judgment, which increases the settlement rate. However, parties' pessimism is shown to increase the probability of trials.

Empirical literature

Two papers address the discovery empirically. Huang (2009) analyzes the effect of the introduction of the discovery on the settlement rate using a natural experiment. In 2000, Taiwan —member of the civilian system— has reformed its civil proceedings by introducing the discovery into its Procedural Civil Code. The author argues that the reform has enabled litigants to get some information that would have remained private prior to the reform. Based on data on 175,000 cases that have terminated between 1996 and 2006, Huang (2009) concludes that the reform has significantly increased the settlement rate in Taiwan. Inglis et al. (2005) analyze the effect of several rules —in particular the discovery— on parties' behaviors using experimental economics. The effect of the discovery rule on the pretrial

13. See also Mnookin and Wilson (1998) and Hay (1994) for theoretical analyses of the discovery.

14. See for example Loewenstein et al. (1993) and Babcock and Loewenstein (1997). The effect of the discovery on such bias is poorly documented in the literature (see Hayashi, 2008).

settlement rate is found to be indeterminate and depends on some other parameters. In particular, the discovery may impede negotiations if the range of possible court's decisions is large.

Some other empirical papers suggest that the pretrial phase is favorable to settlements. They do not explicitly address the discovery, but highlight the positive effect of the sharing of information. To this respect, Farber and White (1991) focus on medical malpractice claims raised against large hospitals or medical personnel over a period of 12 years in a US state. They show that patients file a case in order to obtain information on the physician's degree of negligence. Once they get this information, plaintiffs reach an agreement in 58% of the cases, probably when there is evidence that the physician has committed a fault and 37% of the cases are dropped by parties or dismissed by the judge. [15] This suggests that the discovery phase enables the information to be shared and an agreement to be reached.

Applied to patent cases filed in Germany between 2000 and 2008, Cremers and Schliessler (2014) also find evidence that the information revealed after claims have been brought triggers settlement. For instance, the commissioning of an expert and the questioning of a witness (both measures being ordered by the court) are found to increase the settlement probability by respectively 19.6 and 12 percentage points. However, the voluntary sharing of information is found to be likely to reduce the settlement probability.

Stanley and Coursey (1990) reach the same conclusion by undertaking an experiment in which each player is given the role of defendant or plaintiff. [16] The participants are paired off and have to find an agreement. If they fail to negotiate, the outcome of the case is function of an exogenous lottery which takes the form of an urn containing red and

15. When parties drop the cases, this can be interpreted as an agreement with an amount of settlement equal to zero.

16. This paper is cited by Jacquemet and Gabuthy (2009).

white balls. If the number of red (resp. white) balls exceeds 50, the fictive plaintiff (resp. defendant) wins the case. The composition of the urn is initially unknown by parties but they get more information during the course of the game, as the number of balls they draw increases. The authors show that parties are more prone to settle when they have acquired numerous information during the negotiation.

Overall, the theoretical results indicate that the sharing of information is likely to facilitate settlements, but more empirical evidence is needed to confirm this result. In the literature, the discovery is considered as a mean of exchanging information. The present analysis is more institutional in the sense that it departs from the rules governing the discovery. This requires a detailed analysis of the discovery to capture the various aspects of it. Furthermore, my approach is comparative and aims at capturing the reasons why the settlement rate is lower in the civilian tradition. To my knowledge, Huang (2009) is the only paper adopting such a comparative approach.

This chapter is organized as follows. Section 2 describes the US discovery rules and the French proceedings governing the exchange of information. Section 3 studies the effect of the discovery on parties' incentives to settle. The focus is first on incentives to settle after the discovery (Section 3.1) and then I study the case of incentives to settle before the discovery (Section 3.2). Section 4 concludes.

2 An overview of US and French discovery rules

The US discovery

The so-called US pretrial discovery can be found in the Federal Rules of Civil Procedure (FRCP) enacted in 1938 (Rules 26-37). Although these rules apply to federal cases, the discovery is widely employed in the USA since number of US States have adopted similar or even identical rules (Kobayashi and Parker, 2000). The US discovery refers to a number of procedural devices that give litigants the opportunity to obtain information and documents from their adversary. The Rule 26 provides general dispositions and requires parties to disclose some documents they intend to refer to in their pleadings, like expert testimonies. Other rules force parties, if they are requested to do so by their opponent, to disclose some information that do not necessarily support their position. To this respect, the petitioner can, without any court order, ask written questions to his adversary (Rule 33), [17] question witnesses under oath (Rules 30 and 32), or request the copying of some documents (Rule 34). If a litigant fails to timely and adequately meet his discovery obligations, the petitioner can move for a court order compelling discovery. The non-compliant litigant takes the risk of an adverse judgment if he continues to violate his obligations (Rule 37).

The FRCP also contains some restrictions to parties' powers of investigation. In particular, courts have the possibility to limit the volume of the discovery by restricting the number of depositions and interrogatories, the length of depositions, and the number of requests (Rule 26(b)(2)). A court order is required for some specific requests like the mental or physical examination of another party by a doctor (Rule 35). In addition, the Rule 26 states that "parties may obtain discovery regarding any non-privileged matter that is

17. Such requests are known as "interrogatories".

relevant to any party's claim or defense [...]", thus setting privileged communications and irrelevant facts behind the scope of the discovery. Privileged matters refer to specific communications including those between an attorney and his client, between spouses, between a priest and a penitent, or between the government and any individual if the disclosure might endanger the national security. Facts are considered as "irrelevant" if they are not "reasonably calculated to lead to the discovery of admissible evidence" (Rule 26). To be admissible, an item has to satisfy some criteria of form and content, known as 'admissibility rules' (Kobayashi and Parker, 2000). [18] The form criteria are essentially related to the mechanisms by which a piece has been found ('reliability'). Moreover, a piece also needs to have sufficient merit to be admissible at trial ('rules of relevancy'), which means that it has to make "a fact more or less probable than it would be without the evidence". [19] Overall, the discovery is widely defined with regard to the merit of the pieces, and the limitation of its scope relates mainly to technical questions.

The discovery serves multiple purposes emphasized by Cooter and Rubinfeld (1994), the first of them being the promotion of settlements. Indeed, the exchange of information between litigants should enable them to estimate properly the outcome of the case, thus reducing the number of trials. [20] The discovery also aims at enhancing the quality of the negotiated settlement or, if parties fail to negotiate, the adjudicated outcome. By exchanging more information, parties are not only predicted to settle more, but also to agree on a more accurate settlement amount. Likewise, having more evidence helps the

18. The admissibility rules only apply to one item, and have therefore to be distinguished from the standard of proof. The latter determines the degree of credibility that is necessary to achieve in order to convince the fact-finder given all pieces of evidence.

19. Rule 401 of the Federal Rules of Evidence (FRE). Moreover, according to this rule, the fact "is of consequence in determining the action."

20. In the extreme case, no trial should occur if parties are perfectly informed.

judge to make a correct decision.[21] Finally, the discovery aims at mitigating the number of non-meritorious claims and at reducing the transaction costs of resolving disputes.

The discovery is a contentious issue for several reasons. The main criticisms concern the possibility litigants have to abuse of the discovery. "Fishing expeditions", referring to requests aiming at gathering information that is not necessarily related to the dispute, are often pointed out by commentators. Such abusive requests are expansive and time-consuming for parties facing them, and costly for the society. In Law and Economics, this issue has been addressed notably by Cooter and Rubinfeld (1994) who use the expression "over-discovery" to refer to such practices. From a welfare perspective, there is an abuse if the private value of the requesting litigant's claim exceeds the compliance cost of his adversary.[22] Moreover, the discovery of information that is not necessarily linked to the case raises major issues concerning the business secret, the intellectual property rights and the protection of personal data. Thus, aside from incurring the administrative cost associated to the discovery, parties may have to bear the cost, monetary or not, of revealing some information to their opponent. This issue gives rise to numerous reactions in countries other than the USA where the discovery is intended to apply (Adams, 1995).

To address the problem of the growing cost of litigation, the current trend is to reduce the scope of the discovery. In May 2010, the Federal Rules Advisory Committee meeting at the Duke Law School has resulted in proposals merged into the so-called "Duke Rules Package". The proposed amendments came into force on December 1, 2015. A key change

21. Note that the objective of an accurate decision does not necessarily go hand-in-hand with that of an accurate settlement. See Hay and Spier (1998) stating that "a discovery rule that leads to greater accuracy in adjudication may lead to less accuracy in settlement."

22. To minimize over-discovery, Cooter and Rubinfeld (1994) suggest to make the requesting litigant pay the unreasonable costs of his requests.

concerns the scope of discovery as defined by the Rule 26. An amendment adds proportionality to the scope of discovery. Litigants' requests henceforth have to be "proportional to the needs of the case, considering the amount in controversy, the importance of the issues at stake in the action, the parties' resources, the importance of the discovery in resolving the issues, and whether the burden or expense of the proposed discovery outweighs its likely benefit". [23] Despite this trend, it remains true that parties have large investigation powers.

The French procedure

It is often emphasized that the process of discovering evidence is a private matter in the common law tradition while it lies in the hands of the judge in the civil law tradition (Pejovic, 2001). To this respect, it can be tempting to classify the civil law procedure as inquisitorial and to consider the common law discovery as an adversarial process. Yet, the French Code of Civil Procedure affirms the adversarial principle, most notably in its articles 2 and 9 stipulating that parties have to conduct the proceedings and to prove the facts, and in its article 16 in which this principle is explicitly stated. [24] If one considers a continuum of values between a purely inquisitorial (only the judge controls the discovery process) and a purely adversarial regime (only parties control the discovery process), the French regime

23. Moreover, in a recent case (Bell Atlantic Corp. v. Twombly (550 U.S.544, 570 [2007])), the Supreme Court has increased the pleading standard, thus reinforcing the role of the US judge before the discovery phase. The defendant can more easily seek the dismissal of the suit if the plaintiff fails to allege a plausible claim (Lundberg, 2016).

24. "Les parties conduisent l'instance sous les charges qui leur incombent" (Art. 2). "Il incombe à chaque partie de prouver conformément à la loi les faits nécessaires au succès de sa prétention" (Art. 9). "Le juge doit, en toutes circonstances, faire observer et observer lui-même le principe de la contradiction" (Art. 16).

lies between these two extremes, closer than the US is to the purely inquisitorial regime, but still far from it. A number of elements are highlighted below that shed some lights on this issue, but the main purpose of this section is to take a close look of the differences between the US and the French regime in order to compare the effect of the two proceedings on parties' incentives to negotiate.

The distinction has to be made between the communication of favorable and unfavorable pieces. Parties are forced to communicate all pieces they intend to use to support their claim or defense. [25] This communication has to be spontaneous, meaning that parties have to reveal the pieces by themselves. In case of non-compliance, litigants may be directed to discover these pieces by the court, [26] possibly under financial compulsion if the judge deems this necessary. [27] Furthermore, a piece of evidence submitted by a party cannot be part of the debates during the hearing if both parties have not become aware of it within a reasonable delay prior to the trial. The court can disregard this piece which may lead to an adverse judgment for the non-compliant litigant, or he may delay the hearing to give time to both litigants to take note of all the material. [28]

The two systems become more differentiated when it comes to the discovery of unfavorable pieces. The role of the judge in the civil law tradition as a searcher of evidence is frequently put forward. Indeed, the judge can take the initiative of investigatory measures during the trial phase [29] when he has not enough evidence to decide the case. [30] However, the legislator has strongly limited his power since the judge cannot order such measures to

25. "La partie qui fait état d'une pièce s'oblige à la communiquer à toute autre partie à l'instance. La communication des pièces doit être spontanée." (Art. 132 of the French Code of Civil Procedure)
26. Art. 133 of the French Code of Civil Procedure.
27. Art. 134 of the French Code of Civil Procedure.
28. Art. 135 of the French Code of Civil Procedure.
29. Art. 143 of the French Code of Civil Procedure.
30. Art. 144 of the French Code of Civil Procedure.

supplement parties' when they fail to come with sufficient evidence.[31] In practice, consequently, it is infrequent that judges decide on their own to conduct an inquiry to discover unfavorable pieces. In the vast majority of cases, investigations are requested by parties. A study of the French Ministry of Justice shows that in 7 out of 10 cases, the expertise is ordered by the so-called "juge des référés" prior to the trial (Arnault and Krief, 2003). Such measures, allowed by the article 145 of the French Civil Procedure Code, can only be implemented at the initiative of parties.[32]

Thus, French judges should not be considered as evidence searchers since they rarely *initiate* investigatory measures. Yet, they have an active role during the pretrial phase, in particular because they often *order* judicial expertises.[33] A major role of the judge is therefore to screen parties' requests. Moreover, a litigant intending to use a piece held by a third can file a petition to the court.[34] The judge may respond favorably to the litigant's request by directing the concerned party to reveal the document, possibly under financial compulsion.[35] He may also reject the litigant's request if it lacks merit.

The French judge therefore plays a greater role than the US judge in organizing the discovery of evidence. Another major difference concerns the scope of the discovery, which is much broader in the USA than in France. In France, investigatory measures can be ordered by the judge if the outcome of the case depends on these facts.[36] If a party wants to use a piece of evidence held by his opponent, he has to motivate his request that need to be sufficiently meritorious. In the USA, even if the last reform adds the notion of proportio-

31. Art. 146 of the French Code of Civil Procedure.
32. Among the remaining cases, either the judge or one of the parties is at the initiative of the expertise.
33. Note that extra-judiciary expertises are possible and are not ordered by the judge. Their probative value is not clearly defined by the jurisprudence.
34. Art. 138 of the French Code of Civil Procedure.
35. Art. 139 of the French Code of Civil Procedure.
36. Art. 143 of the French Code of Civil Procedure.

nality, the Rule 26 specifies that discoverable facts do not need to be admissible as evidence.

The main conclusions are the following: (i) The communication of pieces parties intend to refer to at the hearing is mandatory in the USA as in France, without any court order. (ii) The role of the French judge as an evidence searcher is very limited since he cannot order any expertise when parties fail to produce evidence. (iii) The French judge has a more active role than the US judge, most notably for what concerns the selection of parties' requests. (iv) The scope of evidence discovery is broader in the USA than in France. With all this in mind, I study the effect of proceedings governing the gathering of evidence on parties' propensities to settle in Section 3.

3 The impact of proceedings on parties' incentives to settle

The effect of the US and the French proceedings on the settlement rate is analyzed with a special attention to overoptimism and to the asymmetry of information between litigants. The objective is to examine the extent to which the characteristics of the US discovery explain the high settlement rate observed in the USA compared to that in France. Since the two procedures affect parties' knowledge at different stages of the discovery, the distinction is made between negotiations taking place after pieces have been produced (Section 3.1) and that occurring before the discovery (Section 3.2). In the latter case, negotiations take place after parties have been allowed to undertake investigative measures but before new pieces are revealed.

3.1 Incentives to settle after the discovery

The description of the discovery of evidence in the USA and in France suggests that the amount of information revealed during the pretrial process is larger in the USA than in France (Section 2). In the USA, parties have incentives to undertake many requests in the hope that the information transmitted paves the way for high-quality evidence. Even if the legislator attempts to limit the volume of the discovery, it is still broader than in France. More pieces are discovered and, therefore, one expects parties to be better-informed at the end of pretrial proceedings, and to settle more often.

Yet, this statement has to be qualify. The main point is that the broader scope of the discovery does not favor negotiations occurring after the discovery since only exchanged pieces affect the outcome of the trial, in the USA as in France. Second, I will argue that the US discovery is likely to introduce divergences in parties' expectations on the outcome of the case. Third, the US discovery may reinforce asymmetries of information between parties on trial expenditures, and between parties and their lawyers on the outcome of the case. It can possibly discourage parties to settle. These three points are developed in what follows.

First, the sharing of information is likely to encourage parties to settle only if the exchanged pieces influence the court's decision. The broader scope of the US discovery and the selection of requests operated by the French judge imply that some inadmissible pieces may be exchanged in the USA. Indeed, the Rule 26(b)(1) of the US Federal Rules of Civil Procedure stipulates that a piece a litigant seeks to find does not need to be admissible at trial to be discoverable. Thus, even if more pieces are exchanged in the USA, only a fraction of them is admissible at trial and is likely to encourage parties to negotiate.

If one abstracts from inadmissible evidence, it remains true that the US discovery is likely to increase the exchange of pieces that are admissible at trial. This comes from the fact that a party is susceptible to find an admissible piece by chance, when requesting a piece or an investigative measure which is not directly linked to the facts. Such a piece would not be discovered in France because parties' requests must be sufficiently plausible and related to the facts to be allowed by the judge. However, this does not imply a higher settlement rate in the USA. The asymmetry of information may impede negotiations only if some pieces influencing the outcome of the case remain undiscovered. This is not the case in France since pieces cannot be used at trial without having been communicated before the trial. Therefore, the undiscovered pieces in France don't affect the decisions taken by French courts. [37] Since the party who holds the private information is not is a better position than his adversary to estimate properly the outcome of the case, the higher degree of asymmetry of information in France should not affect the settlement rate.

Second, the US discovery is likely to introduce divergences in parties' expectations on the outcome of the case, which may impede negotiations taking place after the discovery (Priest and Klein, 1984; Shavell, 1982). Since a piece may be discoverable though not admissible at trial, parties have to distinguish admissible from inadmissible pieces in order to predict the outcome of the case. They may have different expectations regarding the admissibility of the shared items, firstly because of the complexity of admissibility rules. [38] Indeed, these rules are numerous and are sometimes subject to the interpretation of the judge. Basically, each item has to satisfy two conditions to be admissible at trial. It first

37. This raises other questions concerning the accuracy of the outcome of the case which is another aim of the US discovery (Cooter and Rubinfeld, 1994).

38. These rules determine whether a piece of evidence is taken into account by the trier of facts.

has to be 'reliable' meaning that an item has to meet some conditions relating to the "mechanisms and forms by which evidence may be presented" (Kobayashi and Parker, 2000). It includes for example the issue of hearsay. Most importantly, a piece has to be 'relevant' to be admissible at trial, which consists in "*having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence*" (relevancy rules).[39] As Law and Economists, it is quite natural to interpret 'more probable' and 'less probable' on a bayesian ground (Posner, 1999). Thus, a piece is admissible if the likelihood ratio differs from unity, *i.e.* if the probability a fact has occurred given the item differs from the same probability given that the item has not been discovered. However, Goldman (2005) points out that the likelihood ratio depends on the prior of the judge.[40] Even if one considers that there exists an objective likelihood ratio, one could reasonably have doubts about the parties' ability to predict with certainty whether a piece is relevant.

Moreover, there are some exceptions to the relevancy rule. Indeed, a relevant piece of evidence "*may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence.*" (FRE 403) Again, this rule makes sense economically since it corresponds to a cost-benefit analysis (Posner, 1999), but it introduces some elements of subjectivity on the part of the judge. Indeed, the judge has to decide what 'substantially' means exactly, and the interpretation of the expression 'misleading the judge' is also subject to discussion (Goldman, 2005).

This brief overview of the admissibility rules suggests that the judge has a discretionary power to decide whether a piece of evidence is admissible. A litigant, even with the help

39. US Federal Rules of Evidence 401.

40. "In practical terms, of course, judges will use their own subjective likelihood ratio" (Goldman, 2005).

of his attorney, may encounter difficulties to estimate the real value of the exchanged pieces. Certainly, attorneys are expected to have a detailed knowledge of civil proceedings. However, litigants and their attorneys may be unequally skilled to predict whether a piece is admissible, which is likely to reinforce parties' divergent expectations. This comes from the fact that litigants spend a different amount of money to hire a lawyer, and lawyers have various abilities and devote more or less time and resources on the case. This is in line with the rent-seeking literature applied to the judiciary that postulates a positive relationship between litigants' expenditures and their probability to win the case (e.g. Hirshleifer and Osborne, 2001).

Overall, litigants may be less prone to settle in the USA due to the fact that a piece may be allowed to be discovered even if it is inadmissible at trial. This contrasts with the proceedings in France, where judges order investigative measures only if the piece the litigant seeks to reveal will influence the outcome of the case. By ordering a measure, the judge screens parties' requests according to their merit. He sends a strong signal to the parties concerning the outcome of the case, thus contributing to reduce uncertainty. This signal is all the more credible that the judge is in the best position to estimate the judgment.

The third point of this discussion is that the US discovery may amplify two other types of asymmetries of information that operate during the pretrial process and that are likely to impede negotiations. First, litigants may be unaware of their adversary's ability to produce evidence. This ability mainly depends on the budget parties have decided to allocate to the discovery, most notably the attorney fees, which constitute a private information (Katz, 1988). The asymmetry of information on legal expenses has been shown to generate strategical behaviors and to impede negotiations (Chopard et al., 2010). Such informatio-

nal asymmetries exist everywhere but they may be amplified in the USA because of the design of the US discovery. Indeed, the large scope of the US discovery increases parties' expected discovery cost and consequently reinforces the role of this cost as a determinant of the outcome of the case.

Moreover, informational asymmetries between a party and his lawyer are likely to have stronger consequences in the USA than in France. Many studies in Law and Economics have identified the problem of moral hazard that occurs between attorneys and their clients, and have accounted for by using the agency theory. [41] As a result, parties' high or low propensities to negotiate may result from attorneys' opportunistic behaviors. This asymmetry of information may have stronger effects in the USA than in France due to the more active role of the French judge that leaves less room for attorneys' strategical behaviors. In France, the judge is an additional source of information for parties and helps to mitigate the principal-agent problem they may encounter.

However, the asymmetry of information between an attorney and his client does not necessarily impede negotiations. Indeed, a lawyer may use his private information either to discourage or to encourage settlements, depending on his private interest which is closely related to his remuneration. To this respect, the economic theory shows that lawyers working on a hourly basis (which is mainly the case in France) may be tempted to spend more time than necessary, and advise their clients to litigate rather than to settle. Under contingent fees (which are widespread in the USA), attorneys may adopt several attitudes. They may be willing to settle rapidly to exert less effort, but they may also refuse low settlement offers to obtain a higher remuneration in subsequent negotiations (Visscher, 2014). Therefore, one might expect that the lesser role of the US judge and the greater role

41. These papers mainly study the effect of attorneys' payment schemes on their behaviors (Rubinfeld and Scotchmer, 1993; Visscher, 2014; Emons, 2008).

of US attorneys have a negative effect on the settlement rate, but only if attorneys have incentives to slow down negotiations.

3.2 Incentives to settle before the discovery

In this section, I explore litigants' incentives to settle *before* the discovery of evidence, using pretrial negotiations models. Parties' decision to negotiate is studied after the claimant has requested an investigative measure, but before any information is revealed. [42] Investigative measures are not always allowed, and even if they are, the piece the claimant intends to find does not necessarily exist and may be inadmissible as evidence.

Some modeling choices are made to capture the main aspects of the US and the French proceedings. The focus is on two features that have been highlighted in Section 2, and that are likely to explain differences in litigants' behaviors during negotiations: (i) The *scope effect*: The scope of the discovery is wider in the USA than in France, meaning that more pieces are exchanged, no matter whether they are admissible. In the model, the probability that a request is allowed (or not contested by the judge) is assumed to be higher in the USA than in France. (ii) The *selection effect*: In France, parties' requests are selected by the judge according to their merit while the US judge decides to restrict the discovery mainly when it becomes excessively expensive or time-consuming. To capture the selection effect, the following simplification is made: The French judge accepts the request only if the piece the claimant intends to find will be admissible at trial if it is discovered. Therefore, the probability that the request is allowed equals the probability that the piece is admissible, and the claimant knows that the piece will be admissible if discovered once his request has been allowed. In the USA, a discovered item may not be admissible at trial,

42. The claimant's choice whether to undertake such measure is not studied here.

and the probability that a request is accepted is higher than the probability that the piece is admissible at trial if discovered.

The distribution of the information among litigants and the optimistic bias play a major role in explaining incentives to negotiate. [43] In the context of the model, the claimant —who requests an investigative measure— may be less informed than the defendant concerning the existence of the piece he looks for, or he may overestimate the probability that this piece will be discovered. Thus, parties' propensities to settle in the USA and in France are compared within the three following frameworks: Symmetric information without bias (Section 3.2.2), optimistic bias (Section 3.2.3) and asymmetric information (Section 3.2.4). Before considering these three frameworks, I present the general assumptions (Section 3.2.1).

3.2.1 General assumptions

Consider a claimant P who has filed a complaint by hoping to recover damages J from the alleged tortfeasor D, both of them being neutral to risk. P makes a request (to D or to the judge [44]) in order to discover some evidence against D. This request is accepted or allowed with a probability q in the USA and p in France, with $0 < p < q < 1$. This assumption aims at capturing the scope effect whereby the probability that a request is accepted is higher in the USA than in France. If the investigation is allowed, a piece of evidence is discovered with a probability t, which is the same in the USA and in France.

In France, any discovered piece is assumed to be admissible at trial as a result of the selection effect. Indeed, the French judge is assumed to accept a request only if it allows to discover an admissible item. Thus, the probability that evidence is admissible coincides

43. See section 3.2 of the general introduction.
44. Note that the judge is not a player (Nature).

with the probability that the request is accepted (denoted p). In the USA, the probability that evidence is admissible is assumed to be the same than in France (denoted p). However, by virtue of the selection effect, the probability that a piece is admissible is assumed to be lower than the probability that the request is allowed in the USA (again, $0 < p < q < 1$). This reflects the fact that a piece can be discovered even if it is not admissible (FRCP, Rule 26). For greater clarity, the notations are summarized in Table 10.

	USA	**France**
Probability that the request is allowed	q	p
Probability that a piece is discovered	t	
Probability that a piece is admissible	p	

TABLE 10 – Notations

Once the request has been issued, parties have the possibility to negotiate before the discovery of evidence and/or the judgment. If they agree on a settlement amount S, D pays the amount S to P. Otherwise, either parties enter into the discovery stage which is followed by the judgment, or litigants directly go to trial if the request has not been allowed. I will come later on the course of the negotiation which depends on the informational structure of the game.

Three conditions are needed for P to win the case:[45] His request must have been accepted, and the piece has to be discovered and admissible at trial. The cost of the discovery (resp. trial) is K_i (resp. C_i), $\forall i = P, D$, and I denote $C \equiv C_p + C_d$ and $K \equiv K_p + K_d$. Therefore, if P prevails, his expected utility is $EU_p = J - C_p - K_p$ and that of D is $EU_d = -J - C_d - K_d$. Both parties bear a discovery cost since the discovery phase is

45. This three conditions merge into two conditions in the French case.

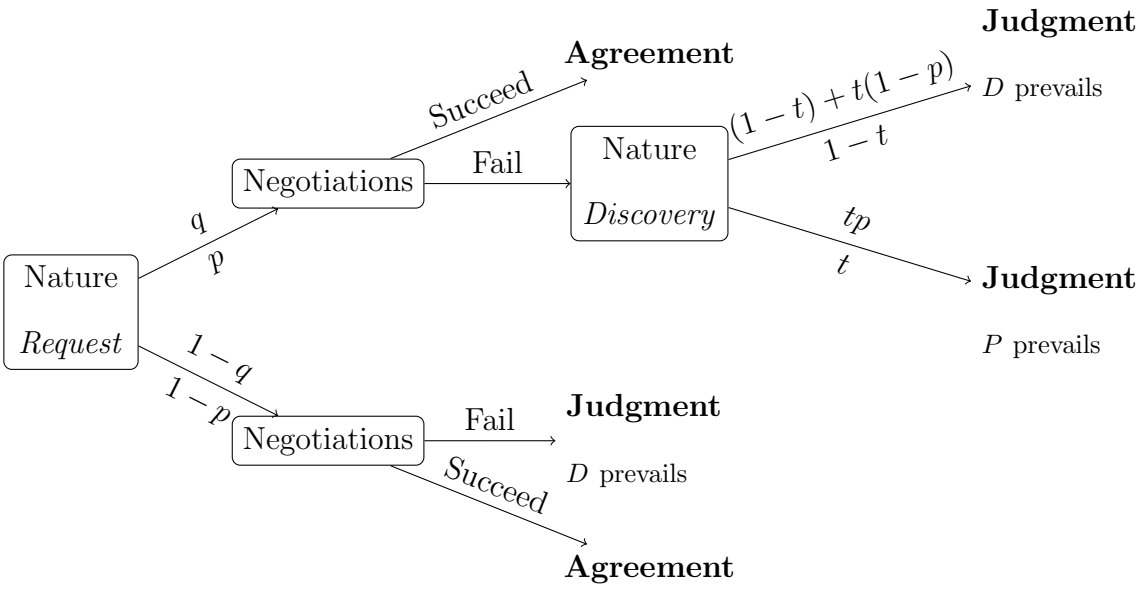


FIGURE 29 – Extensive form of the game

necessary for P to win the case. If D prevails, parties' expected utilities are $EU_p = -C_p - K_p$ and $EU_d = -C_d - K_d$ if the discovery has been allowed [46] and $EU_p = -C_p$ and $EU_D = -C_d$ otherwise.

The game is represented in Figure 29, where the probability above (resp. below) the arrows correspond to the US (resp. French) case.

3.2.2 Benchmark: Symmetric information without optimistic bias

When non-biased parties are equally informed, they always come to an agreement in order to save the costs of discovery and the costs of trial that would be incurred if the negotiation fails. Let Z denote the zone of possible agreements (or negotiation surplus). In the present case, $Z > 0$ in the US as in the French case, and the size of the zone is

46. In this case, D prevails either because no piece has been discovered (in the USA or in France), or because the piece is not admissible at trial (in the USA).

USA		**France**	
Probability	**Z**	**Probability**	**Z**
q	$K+C$	p	$K+C$
$1-q$	C	$1-p$	C

TABLE 11 – Zone of possible agreements with symmetric information and unbiased parties

compared in the two cases. If the discovery is allowed, the parties save both trial and discovery costs by bargaining ($Z = C + K$) while they only save the trial costs in the opposite case ($Z = C$). In addition, the probability that P's request is allowed is equal to q in the USA and p in France. The settlement zone and its attached probability is represented in Table 11 in the two countries. [47]

The *selection effect* does not affect incentives to settle. In the USA, parties have less information at the time of the negotiations than in France. Indeed, in the USA, they learn after the negotiations whether a new piece has been discovered (which happens with a probability t) and also whether this piece is admissible to trial as evidence (probability p). In the French case, parties become aware of the existence of the piece during the discovery, but they already know during negotiations that such evidence is admissible (if discovered) since the request has been accepted by the court. Thus, if P's request is allowed, P's probability of prevailing is higher in France (t) than in the USA (tp), but this does not affect parties' incentives to negotiate. This only shifts the negotiation zone in favor of P in France, but without affecting the size of the surplus. However, the *scope effect* affects

47. The Table 11 reads as follows for what concerns the USA: With a probability q, the settlement zone equals $K + C$ and it equals C with a probability $1 - q$.

the size of the bargaining zone. Parties have more to lose if the discovery is allowed and therefore the surplus is larger if P's request is accepted. A broader scope of discovery thus increases the expected discovery costs for both parties and therefore the settlement zone.

Result 2.1.

(i) Parties always reach an agreement, in the US like in France.

(ii) Due to the scope effect, the zone of possible agreements is larger in the USA than in France.

(iii) The size of the negotiation zone is not affected by the selection effect.

3.2.3 Overoptimism

A framework similar to that of Shavell (1982) is used to account for the optimistic bias. P is assumed to overestimate the probability that the piece he looks for emerges from the discovery process (denoted t previously).[48] His subjective belief is written $\hat{t}$ and is equal to the objective probability (t) to which is attached a multiplicative bias, denoted α. The game is the same as previously, except that t is replaced by $\hat{t}$ with:

$$\hat{t} = \alpha t \tag{2.1}$$

with $\alpha > 1$.[49] The optimistic bias is displayed only if the request is allowed. In this case, in addition to discovery and trial costs ($C + K$), the negotiation zone encompasses a (negative) term which represents the difference between parties' expected judgment (see Table

48. With an optimistic bias on p, it is straightforward that the French proceedings is associated to more settlements due to the selection effect.

49. There is no bias if $\alpha = 1$ which is the case studied in Section 3.2.2.

USA		France	
Probability	**Z**	**Probability**	**Z**
q	$K+C+Jpt(1-\alpha)$	p	$K+C+Jt(1-\alpha)$
$1-q$	C	$1-p$	C

TABLE 12 – Zone of possible agreements with an optimistic bias

12). The more divergent parties' expectations are, the narrower the negotiation zone is. Therefore, in the USA like in France, the optimistic bias reduces the zone of possible agreements, which is a well-know result of the literature (Shavell, 1982). Note that the zone can even disappear if the optimistic bias exceeds a threshold that is higher in the USA than in France. [50] If the optimistic bias lies above (resp. below) the two thresholds, negotiations are never (resp. always) successful. Between the two thresholds, parties come to an agreement in the USA and fail to negotiate in France.

Selection effect

First consider the selection effect occurring once the request has been allowed. As in Section 3.2.2, P's expected judgment is higher in France because P knows, at the negotiation stage, that evidence is admissible. By transmitting a favorable information to P, the judge amplifies the optimistic bias and makes P more confident in the sense that P's optimistic bias applies on a larger expected judgment. As a consequence, there are some values of the optimistic bias for which parties settle in the USA but not in France. Moreover, if the negotiation zone is non-empty, it is still wider in the USA than in France. The selection effect operated by the French judge has therefore a negative effect on incentives to negotiate.

50. The zone disappears if $\alpha > \frac{K+C+Jpt}{Jpt}$ in the USA, and if $\alpha > \frac{K+C+Jt}{Jt}$ in France.

Scope effect

The wider scope of the US discovery has an ambiguous effect when comparing the size of the surplus in France and in the USA. Recall that in the benchmark case, the settlement zone is wider when the discovery is accepted than rejected, since parties may save more by negotiating. This result does not hold if P is highly optimistic following the court's decision to accept the investigative measure. [51] The bias reduces the settlement zone (or even makes it disappeared) so much that it becomes narrower than the zone when the discovery is not allowed ($Z = C$). Therefore, in that case, the limited scope of the French discovery favors settlement. On the contrary, a low optimistic bias makes the US proceedings more favorable to agreements since in that case, the surplus is higher if the request has been allowed. [52] There is also an intermediary case in which the settlement zone is larger if the discovery is allowed in the USA and if it is rejected in France. [53] In that case, the preferable option to promote settlements is to restrict expertises in France while encouraging them in the USA.

Overall effect

The selection and the scope effects do not always play in the same direction, but it is easy to compare the average settlement zones in the USA and in France. They can be written:

$$\bar{Z}_{US} = q[K + C + Jpt(1 - \alpha)] + (1 - q)C \tag{2.2}$$

51. Namely if $\alpha \geq \frac{K+Jpt}{Jpt}$.
52. It corresponds to the case $\alpha < \frac{K+Jt}{Jt}$.
53. $\frac{K+Jpt}{Jpt} \leq \alpha < \frac{K+Jt}{Jt}$

and

$$\bar{Z}_F = p[K + C + Jt(1 - \alpha)] + (1 - p)C \tag{2.3}$$

A simple calculation is sufficient to show that the settlement zone is on average larger in the USA than in France ($\bar{Z}_{US} > \bar{Z}_F$).

Result 2.2. If P exhibits an optimistic bias on t:

(i) Parties fail to settle when the bias exceeds a threshold that is higher in the USA than in France.

(ii) The selection effect implies that the optimistic bias impedes negotiations more in France than in the USA.

(iii) The wider scope of the US discovery favors settlements in France for high values of the bias and favors settlements in the USA for low values of the bias.

3.2.4 Asymmetric information

It is now assumed that D knows whether the piece P hopes to find exists or not. In practice, it may be the case, for instance, when a piece which is favorable to P is held by D. An order of play is introduced during the negotiations so that P makes a settlement demand, denoted S, that can be either accepted or rejected by D. With these assumptions, the new game is a game *à la* Bebchuk (1984) that is represented by Figure 30. The first (resp. second) term in parenthesis is P's (resp. D) expected utility. If the judge has accepted the request, P does not know whether the piece he wants to find exists, but D has this information. As previously, the probability that the piece is admissible is known by both

parties when the judge accepts or rejects the request in France while parties become aware of it after the discovery in the USA.

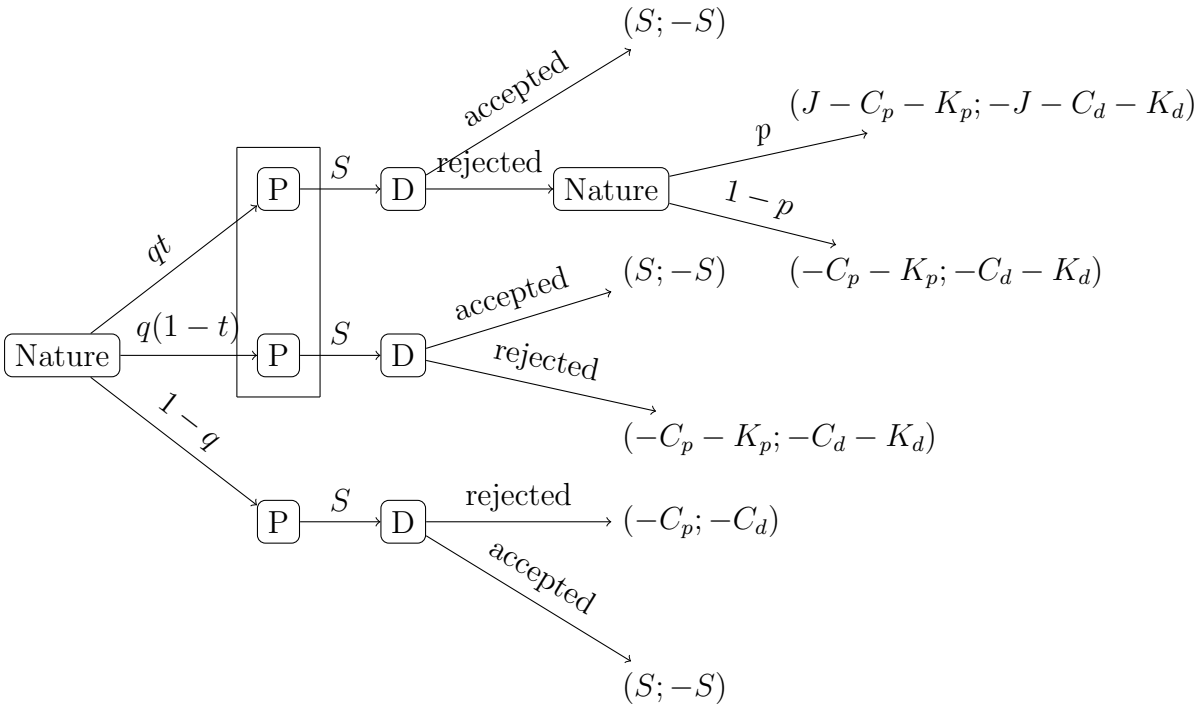
US case

I first assume that P's request has been allowed and that D knows that the piece of evidence does exist. In that case, P wins the trial if the piece is admissible (with a probability p), which is known at the end of the game. D's expected utility can be written $EU_D = p(-J - C_d - K_d) + (1-p)(-C_d - K_d)$ and therefore, D accepts any settlement demand such that $S \leq pJ + C_D + K_D$. If the piece does not exist, D accepts to settle if it allows him to save the discovery and the trial costs, namely if $S \leq C_d + K_d$. One step backward, P only observes the probability t that the piece of evidence is found. P may either propose $S = pJ + C_D + K_D$, in which case his settlement demand is accepted only if the piece exists (this happens with a probability t) or propose $S = C_D + K_D$, which is always accepted. The first option gives him a higher expected utility if:

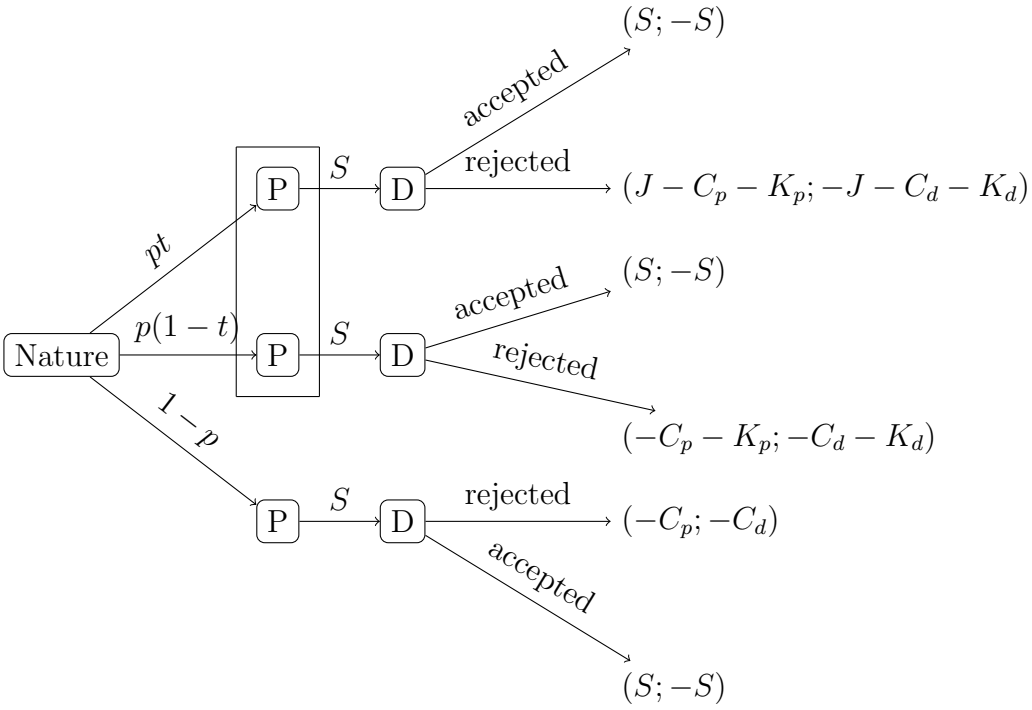
$$t > \frac{C + K}{pJ + C + K} \equiv \bar{t}_{US} \tag{2.4}$$

If P's request is disallowed by the judge, D holds a private information that has no consequence on the outcome of the case. P makes a settlement demand $S = C_d$ which is always accepted by D. Overall, parties always settle except when the discovery is allowed and P makes a high settlement demand while there is no evidence. If t follows a cumulative distribution function denoted $F(.)$, then the probability of settlement in the USA can be written:

$$Pr(settlement_{USA}) = 1 - qE(1 - t/t > \bar{t}_{US})(1 - F(\bar{t}_{US})) \tag{2.5}$$



(a) US case



(b) French case

FIGURE 30 – Game with asymmetric information

which is equivalent to:

$$Pr(settlement_{USA}) = 1 - q\int_{\bar{t}_{US}}^{1}(1-t)f(t)\,\mathrm{d}t \tag{2.6}$$

French case

If the request is accepted, parties know that P prevails only if the piece is discovered. If, in addition, D has a superior information concerning the existence of the piece, then D is able to estimate precisely the outcome.[54] D accepts the settlement demand if $S \leq C_P + K_P + J$ if he knows that the piece will emerge from the discovery, and if $S \leq C_P + K_P$ otherwise. Maximizing his expected utility, P makes the high settlement demand if:

$$t > \frac{C+K}{J+C+K} \equiv \bar{t}_{FR} \tag{2.7}$$

The case where the judge rejects the request is identical to the US case, namely parties always settle. Therefore, the probability of settlement can be written:

$$Pr(settlement_{FR}) = 1 - pE(1-t/t > \bar{t}_{FR})(1-F(\bar{t}_{FR})) \tag{2.8}$$

which is equivalent to:

$$Pr(settlement_{FR}) = 1 - p\int_{\bar{t}_{FR}}^{1}(1-t)f(t)\,\mathrm{d}t \tag{2.9}$$

Comparison

The probability of settlement is higher in the USA than in France if:

54. There is no uncertainty in the sense that Nature makes no move after litigants have played.

$$\frac{p}{q} > \frac{\int_{\bar{t}_{US}}^{1}(1-t)f(t)\,\mathrm{d}t}{\int_{\bar{t}_{FR}}^{1}(1-t)f(t)\,\mathrm{d}t} \tag{2.10}$$

Scope effect

The left-hand term is inferior to unity due to the wider scope of the US discovery ($p < q$). The closer q is to p, the higher is the probability that settlements are more successful in the USA than in France. Therefore, the limited scope of the evidence production process in France gives higher incentives to settle than the broad scope of the US discovery. This comes from the fact that parties always settle when the discovery is not allowed while the probability that the negotiation is successful is inferior to unity otherwise.

Selection effect

The right-hand term is inferior to unity because of the way the selection of requests is undertaken in both countries. In the USA, P's request may lead to an inadmissible piece even if the discovery has been allowed by the judge. Therefore, D can hope to win the case even if he knows that a piece against him does exist. In France, D has no chance of winning the case if a piece against him is discovered because of the screening role of the judge. Thus, D's negotiation power is stronger in the USA than in France, and the probability that evidence is discovered must be higher than in France ($\bar{t}_{US} > \bar{t}_{FR}$) so that P makes a high settlement demand ($S = J + C_D + K_D$). As a consequence, P is less likely to make a high settlement demand and cases are more likely to settle in the USA.

Overall effect

The two effects play in opposite directions: The scope effect favors negotiations in France while and the selection effect encourages parties to settle in the USA. The country where

the settlement probability is predicted to be higher depends on which effect dominates. The probability that evidence is admissible at trial p plays a key role in determining which effect dominates, first because it sets out the scope of the French discovery of evidence. The scope becomes narrower as p decreases thus favoring settlements in France as compared to the US case. The variable p also tends to increase D's negotiation power in the USA as p becomes closer to 0. This decreases the probability of high settlement demand from P thus favoring settlements in the USA. The overall effect also depends on the scope of the US discovery (q) as well as on the form of the cumulative distribution function of the probability that evidence emerges from the evidence production process $F(.)$. Further assumptions on the values of these parameters and on the form of the cumulative distribution of t are needed to determinate the dominating effect.

Result 2.3. If D has a private information on t and P makes a settlement demand:

(i) Parties always settle except when this three cumulative conditions are met: the discovery is allowed, P makes a high settlement demand and there is no evidence.

(ii) The scope effect tends to favor settlements in France because negotiations are more likely to fail when the request is allowed.

(iii) The selection of requests in France contributes to impede negotiations.

In this section, I have considered the possibility for the claimant to be overoptimistic or to be imperfectly informed concerning the existence of a piece supporting the claimant's position. The judge gives no information to parties concerning the existence of a piece. With this assumption, the broader scope of the US discovery favors settlements in a context of symmetric information without bias, but not if the claimant has a strong optimistic bias

	Scope effect	Selection effect	Overall effect
Perfect information without bias	Favors settlement in the USA	No effect	More settlements in the USA
Optimistic bias	Depends on the size of the bias	Favors settlements in the USA	More settlements in the USA
Asymmetric information	Favors settlements in France	Favors settlements in the USA	Indeterminate

TABLE 13 – Summary of the results

or if he is imperfectly informed. The limited scope of the French procedure thus tends to favor settlements if one steps outside the framework of perfect rationality and information. However, the fact that requests are randomly selected in the USA while they are selected according to their merit in France is found to have negative consequences on parties' propensities to settle in France. These results are summarized in Table 13.

4 Conclusion

This chapter departs from the idea that the discovery helps to promote settlements. It discusses this claim by including the French procedure into the analysis, having in mind the much higher settlement rate which is observed in the USA. The analysis suggests that the US discovery does not promote settlements more than the French procedure when considering negotiations occurring after the discovery. The main argument is that the

judge cannot decide a case on the basis of a piece that has not been communicated to both litigants. Therefore, at that time, there should be no uncertainty concerning the *nature* of the exchanged pieces in the USA like in France. Yet, there may be some uncertainty on the *merit* of each shared piece, particularly in the USA where the exchange of inadmissible pieces is allowed by discovery rules. Due to the lower uncertainty regarding the admissibility of evidence, I have argued that parties should be more encouraged to settle in France.

The higher US settlement rate may be better understood when considering negotiations occurring before the discovery. This is in line with the statistics presented in the introduction (see Section 1, Figure 28 (b)) suggesting that cases are more likely to end before pretrial (64%) rather than during or after pretrial (13%) in US District courts. Using models of pretrial negotiations, the present analysis shows that the wider scope of the US discovery encourages parties to settle more than the French proceedings if there is no asymmetry of information and if the claimant's optimistic bias is not very strong. Indeed, the broader scope of the US discovery induces a higher private cost, which increases the negotiation surplus and therefore favors settlements. Furthermore, the role given to the French judge consisting in the selection of parties' requests to undertake investigative measures tends to impede negotiations. It contributes to reinforce the claimant's optimistic bias once his request has been allowed, and to increase the negative effect of asymmetric information. As a result, the claimant is more demanding during negotiations which impedes negotiations.

Further avenues of research consist in apprehending more globally the role of the rules governing the production of evidence on negotiations in the common law and in the civilian traditions. Some aspects of the discovery that I have put aside in this chapter may affect litigants' incentives to settle. In particular, I have assumed identical trial and discovery costs in both countries but they are likely to be higher in the USA thus giving rise to

different incentives. Moreover, the French judge places much emphasis in some fundamental principles including the right to privacy and professional secrecy before allowing an investigative measure, which is not the case in the USA. Parties may be reluctant to reveal some information for reasons which have nothing to do with the judicial procedure. This may affect parties' behaviors and in particular their incentives to negotiate.

Deuxième partie

The Discovery Process as a Rent-Seeking Game: The Role of Evidentiary Rules

3 Regulating Legal Expenses: The Role of Evidentiary Rules

1 Introduction

1.1 Motivation

In civil proceedings, a fair trial requires each litigant to present his view to the court and to provide some pieces supporting his position. To this aim, the discovery stage helps meritorious litigants to throw lights on the facts before the case is heard. Such proceedings are expected to increase the accuracy of the case outcome and to favor settlements. However, discovery rules come at a certain cost when they are misused by litigants. By seeking to be more persuasive than their adversary, non-cooperative litigants are likely to enter a spiral of increasing legal expenses. To avoid such pitfalls, several countries have implemented some limitations to the discovery process. Hence, following Lord Woolf's report, a court reform came into force in England providing that courts can appoint a single expert rather than authorizing each party to choose his own expert (Woolf, 1996). In the United States, some amendments to the Federal Rules of Civil Procedure came into effect in December 2015. They aim among others at reducing the increasing cost of the discovery

by stipulating that parties' requests have to be "proportional to the needs of the case". [1]

In this chapter, I explore the opportunity to use evidentiary rules as instruments for regulating parties' legal expenses. The objective is twofold: First, it is an attempt to model the incentive effects of different rules of proof, in accordance with definitions that receive a broad consensus among Law and Economists and legal practitioners. This chapter focuses on two rules: On the one hand, the *standard of proof*, which defines the strength of evidence required for a party to win the case compared with that of his opponent. On the other hand, this study is on the burden of production, which is part of the burden of proof, together with the burden of persuasion. [2] The burden of production specifies which litigant has the duty to come forward with evidence in court (Bernardo et al., 2000). The standard of proof and the burden of production strongly differ in nature. Most significantly, they intervene at different stages of the judicial process: The burden of production affects the process by which evidence is submitted to the court during the pre-trial phase of the dispute while the burden of persuasion is an instruction given to the judge concerning the way of resolving a case at the end of the hearing. This chapter aims at apprehending these two aspects of the burden of proof.

To model the evidentiary process, a rent-seeking framework is used in which parties spend resources to support their claims and convince the court. In addition to capturing

1. See Section 2 of Chapter 2 for an overview of the US discovery.

2. The burden of persuasion is closely linked to the standard of proof. It requires one of the litigants to present *enough* evidence to convince the fact-finder while the standard of proof specifies the extent to which the burdened litigant has to be more convincing than his adversary (Talley, 2013). Therefore, the standard of proof can be viewed as a refinement of the burden of persuasion.

well the competition between parties that exists in adversarial procedures, [3] this framework appears as a relevant tool to deal with rules of proof because it provides many possibilities to introduce asymmetries between litigants (Dari-Mattiacci et al., 2015). This reflects adequately the nature of evidentiary rules since each of these rules generates some asymmetries to a certain extent and at a certain stage of the evidentiary process. Moreover, the law of evidence provides a rationale for the assumptions made in rent-seeking models applied to the judiciary. For instance, it provides arguments to make assumptions on the sequence of the game, or on the form of the contest success function. [4]

The second aim of this chapter is to derive normative implications using the proposed framework. This chapter focuses on the cost of litigation, defined as the sum of parties' legal expenses. The cost of litigation is of particular interest within this framework because rent-seeking models allow to make it endogeneous, but it is also relevant in a practical point of view since it has become a key issue in most developed countries. If the competition in evidence helps undeniably to discover the truth, it may also have strong side effects regarding the social cost of litigation and, *in fine*, the enforcement of the law. There are two channels through which spiraling legal expenses may affect the social cost of litigation. First, parties' expenses are part of the social cost even if they are incurred by private actors. The social planner aims at minimizing not only the functioning cost of the judiciary but also the private cost of litigation, in order to make the judicial system accessible to all

3. The adversarial nature of the process describes well the civil procedure in the common law tradition but also to a lesser extent in Continental European countries where parties play an important role, even if the judge has a more active role. See Section 2 of Chapter 2.

4. This is a key function of rent-seeking models that specifies the claimant's probability of success according to parties' legal expenses. Sanchirico (2011) has pointed out the need to discuss the exogenous form of the contest success function.

citizens and, by this way, to increase the level of law enforcement. Second, a cost inflation is associated to a high number of requests during the discovery which tends to extend the duration of judicial proceedings. At an aggregated level, an increase in delays also lessens the effects of the law because it constitutes a barrier to entering the judiciary.

1.2 Main results

The results concerning the effect of the standard of proof on legal expenses are summarized before reviewing the results on the burden of producing evidence. The standard of proof is modeled as a multiplying coefficient applying to the defendant's effort. With this assumption, the effect of the standard of proof on the cost of litigation is substantial. I compare the cost of litigation with three different standards of proof: The preponderance of evidence (equivalent to a 50%-standard) implying that the most credible litigant is the most likely to win the case, a 90%-standard corresponding to the full standard applying in the Continental European tradition and an intermediate standard of 80% (e.g. the clear and convincing evidence standard applying in the US law). Within this framework, I find that the comparison between the three standards only depends on the ratio of parties' marginal costs. The 90%-standard is generally better than the preponderance of evidence to minimize the cost of litigation, except when the claimant has a strong cost-advantage in which case it is the preponderance of evidence which induces the lowest level of legal expenditures. [5] It is also interesting to note that the intermediate standard is never the best to reduce the sum of the costs incurred by parties. It suggests that such a standard

5. Mathematically, the defendant's marginal cost has to be more than three times that of his opponent so that the preponderance of evidence leads to less legal expenses than the 90%-standard.

cannot be justified on the basis of the litigation cost criterion. [6]

To have the intuition of these results, it should be remembered that all three standards compared favor the defendant but to a different extent: While the preponderance of evidence requires the claimant to be at least more convincing than the defendant, the 80%-standard —and even more the full-conviction one— is much more demanding for the claimant. Consider also that litigants face asymmetric marginal costs of litigation. Everything else being equal, the low-cost litigant has a higher probability of winning the case at the equilibrium. Therefore, if the defendant has a cost-advantage, the high standard of proof reinforces this initial asymmetry. This tends to mitigate the competition between parties and to moderate their legal expenditures. Indeed, parties are more prone to invest when they are on an equal footing because a marginal increase of their expenses has a substantial positive effect on their success probability. Conversely, they tend to limit their expenses when one of them has a significant advantage. This result also holds if the claimant has a relatively limited cost-advantage at the beginning. However, when the claimant faces a very low cost compared to that of his adversary, the most stringent standard compensates this advantage thus exacerbating the competition and increasing legal expenditures of both parties. In this case, the preponderance of evidence is the best standard to reduce the cost of litigation.

The present analysis also examines the effect of the burden of production on litigants' legal expenses. The burden of production is modeled by introducing a sequence during the evidentiary process. The burdened party has to come with evidence at first and the unburdened one responds in a second step. It corresponds to a Stackelberg-protocol in

6. The intermediate standard considered in the model is set at 80% but this conclusion applies with any standard lying between 50% and 90%.

which the burdened litigant is the leader and each litigant plays once. This time-sequence describes well the burden of production in practice and is consistent with a simple game theoretical approach: As shown by Hay and Spier (1997), the unburdened party has no interest to come with evidence at first since he wins the case if no evidence is produced by neither litigants. Using the Stackelberg protocol as a solution concept, I compare the total cost of litigation depending on whether a sequence is introduced or not and, if so, according to the identity of the burdened litigant. The main results that emerge from the model are the following: First, the case where both parties choose simultaneously their litigation effort is never optimal. It is always possible from a non-regulated discovery process to introduce a mandatory time-sequence in order to mitigate legal expenses. This provides a rationale for the burden of production rule. Second, the results suggest that the burden of production has to be properly assigned to allow for a reduction in the cost of litigation. I find that the burden of production ought to be placed on the high-cost litigant to minimize the total cost of litigation. If the litigant who is the first to present evidence has a cost-advantage, he exploits at a maximum his advantage thus triggering a serious rise in costs, whichever the effort level chosen by the unburdened litigant. Requiring the high-cost agent to present evidence first helps to prevent such spiral of increasing legal expenses.

1.3 Related literature

Law and Economics contributions on rules of proof undertake divergent modeling approaches and are based on different welfare criteria.[7] The standard of proof has been analyzed as a tool to mediate between the two types of errors (Kaye, 1982; Davis, 1994). Several papers introduce the efficient use of resources as a welfare criterion in addition

7. See Sanchirico (2011) for a survey.

to the objective of avoiding errors, but in a criminal context (Rubinfeld and Sappington, 1987; Miceli, 1990). The standard of proof has also been analyzed with regard to the deterrence criterion. To this respect, Lando (2002) and Demougin and Fluet (2006) show that the preponderance of evidence generates maximal incentives. Ganuza et al. (2012) characterize the optimal standard of proof using a principal-agent model in which the court (principal) seeks to encourage potential injurers (agent) to exert due care. Accounting for the minimization of errors and the provision of maximal incentives at the same time, Demougin and Fluet (2005) highlight the existence of a trade-off between these two objectives.

The burden of proof has been studied in a normative perspective by Hay and Spier (1997). The authors assume that evidence perfectly reflects the truth so that the accuracy issue does not arise at the equilibrium. They show that, in order to minimize the cost of litigation, the burden should be placed on the litigant whose cost of presenting evidence is the lowest and on the party who is the less likely to have a valid claim. Note that the result I obtain by endogeneizing the cost of presenting evidence contrasts with the first of these assertions. Shin (1994) develops a persuasion game aiming at determining the extent to which a decision-maker is able to extract all the relevant information from selectively produced evidence.[8] He shows that an uninformed arbitrator seeking to make an accurate decision should put the burden on the party with better access to relevant information. Sanchirico (2008) accounts for the primary behavior of the defendant. Each party decides simultaneously whether to present evidence, and litigation costs' are function of the defendant's *ex ante* behavior. In this context, the author shows that deterrence is maximized when the burden is on the plaintiff. Bernardo et al. (2000) study how legal presumptions

8. See also Milgrom and Roberts (1986) and Froeb and Kobayashi (1996).

must be set to maximize *ex ante* incentives and to minimize the cost of litigation. The authors find that pro-plaintiff presumptions maximize the frequency of suit but deter shirking (and vice versa) which contrasts with Sanchirico (2008) if one considers that a pro-plaintiff presumption is equivalent to a shift of the burden of proof to the defendant.

From a methodological perspective, the present chapter is part of the rent-seeking literature, initiated by Tullock (1980) and applied to the judicial process for instance by Katz (1988). [9] The central assumption is that a party can increase his probability of winning by engaging legal expenses. Within this framework, different features of the legal procedure have been studied including fee shifting (Braeutigam and Panzar, 1984; Farmer and Pecorino, 1999; Gong and McAfee, 2000; Baye et al., 2005) and the adversarial versus inquisitorial nature of the judicial system (Parisi, 2002). To the best of my knowledge, Bernardo et al. (2000) is the only paper that introduces rules of proof in a rent-seeking setting. The present chapter is also close to papers introducing some asymmetries into rent-seeking games. To this respect, Dari-Mattiacci et al. (2015) study how asymmetries in the litigation success function affect rent dissipation. In Hirshleifer and Osborne (2001), the asymmetry comes from the introduction of a sequence in the rent-seeking game. The authors compare the Nash to the Stackelberg-protocol with regard to the aggregated litigation cost. [10]

The chapter develops as follows. Section 2 presents the benchmark framework. Section 3 analyzes the effect of the standard of proof on parties' legal expenses while Section 4 focuses

9. In the remainder of the chapter, I explain why rent-seeking models are interesting to describe the effect of the standard of proof (Section 3.1) and the burden of proof (Section 4.1).

10. In Hirshleifer and Osborne (2001), the plaintiff is always the leader.

on the effect of the burden of production. Section 5 concludes.

2 Benchmark framework

In this section, I develop the basic model to characterize parties' behavior in the absence of any rules of proof.

2.1 Assumptions

General assumptions

Consider two risk-neutral litigants, the claimant (P) and the defendant (D). P has filed a lawsuit against D and hopes to obtain a predefined recovery denoted J from the court. The amount at stake J is assumed to be equally valued by parties which rules out any optimistic behavior. Parties have failed to reach a negotiated agreement and they no longer seek to settle.[11] Moreover, I postulate that there is no asymmetry of information between parties regarding the value of the parameters and the underlying functions. In particular, each party knows the marginal litigation cost of his opponent. I also abstract from agency problems that may rise between each party and his attorney.

The trial process is modeled as a rent-seeking game in which litigants compete for the appropriation of a rent. Each litigant makes a single choice concerning his litigation effort, denoted x_p for P and x_d for D. A rise in x_i contributes to increase i's probability of winning the case, but also induces a private cost for the litigant i. This setting appears as a useful tool to describe the evidentiary process. In the judicial context, parties' efforts can be interpreted as a body of evidence supporting the position of the litigant who exerts them.

11. See Section 3.2 of the general introduction for a review of the literature on bargaining failure.

Evidence may take the form of either pieces of information obtained for example through testimony or of a persuasive argument made by attorneys. In both cases, these efforts induce some legal expenses like attorneys' fees or other fees incurred to prove the facts. Applying a rent-seeking game in a judicial contest, Katz (1988) interprets parties' efforts as "arguments and favorable facts" which is in line with this interpretation. Hirshleifer and Osborne (2001) highlight the existence of alternate methods of influencing the outcome of the case, including "deception, bribery and coercion". I abstract from these techniques to focus on those aiming at making litigants' cases more convincing, which allows rent-seeking models to be used as a framework to study the effect of evidentiary rules.

Most of the existing rent-seeking literature on legal battles employs the Nash-Cournot protocol (e.g. Katz 1988). In line with this literature, I employ this solution concept in the benchmark model. It implies that litigants choose simultaneously how much effort to devote to the contest without observing their opponent's decision. I will further discuss this assumption and argue that the burden of proof affects the sequence of the litigation game (see Section 4).

The contest success function

The contest success function describes the effect of parties' efforts on the outcome of the case. The following contest success function is used in the benchmark model:

$$f(x_p, x_d) = \frac{x_p}{x_p + x_d} \tag{3.1}$$

where $f(x_p, x_d)$ is the probability that D loses and $1 - f(x_p, x_d)$ is D's probability of prevailing. These probabilities are functions of parties' efforts denoted x_p and x_d. This contest

success function displays the following properties:

- *Property 1*: f'_{x_p} and $(1-f)'_{x_d}$ are positive
- *Property 2*: f''_{x_p} and $(1-f)''_{x_d}$ are negative
- *Property 3*: $f(x_p, x_d) = \frac{1}{2}$ when $x_d = x_p$
- *Property 4*: $\lim_{x \to 0} f(x, x) = 0$

In words, each party increases his probability of success by exerting more effort (Property 1) but the marginal return on effort is decreasing (Property 2). Moreover, the outcome of the case is random when parties come with the same amount of evidence (Property 3) and P tends to lose the case in the absence of any production of evidence (Property 4).

Finally, it should be noted that several generalizations are possible. First, The contest success functions defined by equation (3.1) is a special case of the Tullock (1980) logit-form function. The more general Tullock (1980) function accounts for the parties' returns to effort (r) as follows:

$$f(x_p, x_d) = \frac{{x_p}^r}{{x_p}^r + {x_d}^r} \tag{3.2}$$

Tullock (1980) specification makes it possible to control and analyze the effect of the return on effort. In particular, this formulation opens the possibility of increasing marginal returns. In a judicial context it seems reasonable to assume decreasing marginal returns (Property 2). A few pieces of evidence play a critical role while the multiplication of additional pieces remains peripheral.

Second, parties are assumed to be identical. The only source of asymmetry in the return function is endogeneous and comes from parties' choices of effort. There are a number of reasons to introduce an exogenous asymmetry between litigants, including the merit of

the case. In this perspective, several authors have introduced the defendant's degree of fault as a determinant of parties' probabilities of success (Hirshleifer and Osborne, 2001; Braeutigam and Panzar, 1984). In the present chapter, the defendant's primary activity does not appear in the success function because it is not a parameter of interest. However, it does not mean that parties' choices of effort are independent from the truth. It could be argued that the cost incurred by each party reflects the defendant's *ex ante* behavior (e.g. Sanchirico, 2008). A second source of asymmetry —and it is the subject of this chapter— is the existence of rules, and most notably evidentiary rules. This case will be examined in Sections 3 and 4.

The cost function

Parties' litigation efforts come at a cost denoted C_i so that litigants face a trade-off between the positive effect of their effort on the outcome of the case and the cost incurred. Parties' cost of litigation is increasing in their litigation efforts. I assume that:

$$C_i(x_i) = c_i x_i \tag{3.3}$$

Thus the marginal cost is assumed to be constant for both litigants. However, this specification allows for different costs among parties.

2.2 Equilibrium

With the assumptions presented above, the expected utility function of each litigant can be written:

$$EU_p(x_p) = f(x_p, x_d)J - c_p x_p \tag{3.4}$$

$$EU_d(x_d) = -f(x_p, x_d)J - c_d x_d \tag{3.5}$$

where $f(x_p, x_d)$ is given by equation (3.1). At the equilibrium, each litigant i simultaneously decides on x_i where $x_i \geq 0$, by maximizing his utility function and taking his opponent's choice as given. Litigants' best replies can be written:

$$x_p(x_d) = \begin{cases} \sqrt{\frac{Jx_d}{c_p}} - x_d & \text{if } x_d < \frac{J}{c_p} \\ 0 & \text{otherwise} \end{cases} \tag{3.6}$$

$$x_d(x_p) = \begin{cases} \sqrt{\frac{Jx_p}{c_d}} - x_p & \text{if } x_p < \frac{J}{c_d} \\ 0 & \text{otherwise} \end{cases} \tag{3.7}$$

At the equilibrium, P (resp. D) never plays $x_p \geq \frac{J}{c_d}$ (resp. $x_d \geq \frac{J}{c_p}$). Indeed, anticipating such high level of effort, the adverse party would refrain from investing and P (resp. D) would be better to deviate and to choose a smaller effort level. Likewise, parties never refrain from investing at the equilibrium. If a litigant anticipates his opponent to choose $x_i = 0$, he would devote a positive amount of effort to increase his winning probability. In this context, his opponent has no interest to refrain from engaging legal expenses. Therefore, there is no corner solutions in this setting. The combination of the two first equations of (3.6) and (3.7) gives the following equation:

$$\frac{x_p}{x_d} = \frac{c_d}{c_p} \tag{3.8}$$

It shows that the relative effort of the claimant, at the equilibrium, is inversely proportional to his relative marginal cost. Therefore, the litigant who spends the most is the one with the lowest marginal cost. The litigation effort choices at the equilibrium are obtained by substituting equation (3.8) into equation (3.6) or (3.7) :

$$x_p^* = \frac{Jc_d}{(c_p + c_d)^2} \tag{3.9}$$

$$x_d^* = \frac{Jc_p}{(c_p + c_d)^2} \tag{3.10}$$

In this benchmark setting, the determinants of parties' level of effort are the marginal costs of litigation of both parties and the recovery. A litigant invests more heavily as his own marginal cost decreases. If the marginal cost of his opponent varies, he may invest more or less depending on the ratio of marginal costs. The level of effort also tends to rise when the amount at stake increases.

3 The standard of proof

In this part, the standard of proof is introduced in the benchmark model to analyze its effect on parties' legal expenses.

3.1 Modeling the standard of proof

It is useful to clarify the meaning of "standard of proof" and that of "burden of persuasion" before describing the modeling choices. The standard of proof is a threshold that specifies the degree of conviction required so that the court decides the case in favor of the claimant. A threshold equal to 50% implies that the claimant wins the case if his assertion

is more likely true than not true. Such standard, known as "preponderance of evidence" or "balance of probabilities", is prevalent in common law countries. [12] In the civil law tradition, courts are supposed to use a harsher standard of "full conviction". In France, for example, the "intime conviction" is usually interpreted as such a high standard. The threshold is generally said to be 90% or 95%, and sometimes even more (Schweizer, 2013). When the standard approaches 100%, the court has to be increasingly convinced of the claimant's assertion to rule the case in his favor. This constitutes a significant difference between the two main legal traditions (Demougin and Fluet, 2005).

This concept has to be associated with that of the burden of persuasion. According to Talley (2013), the party charged with the burden of persuasion is the one who must present enough evidence to convince the fact-finder. Hay and Spier (1997) define the burden of persuasion as the court's decision when the fact-finder is in equipoise, meaning that he thinks that the illegal event is equally likely to have happened or not to have happened. Therefore, the burden of persuasion is a binary rule that requires one litigant to be more convincing than his opponent. It contrasts with the standard of proof which is a threshold with a range of possible values along a continuum.

However, these two rules are closely linked. The definition above suggests that the burden of persuasion is placed on the claimant when the standard of proof is greater than 50%, and on the defendant otherwise. Both rules are based on the same logic, but the standard of proof defines more precisely how the judge has to weight evidence because it specifies which side has to be more convincing, but also *to which extent*. For instance, the "preponderance of evidence" gives the burden of persuasion to the claimant but the benefit

12. Other standards of proof apply in the common law tradition, the harshest one in civil matters being the "clear and convincing evidence" which may correspond to a 70-80%-standard (Talley, 2013).

is limited for the defendant since this rule requires the claimant to be at least more credible than the defendant to win the case. With a harsher standard, the burden of persuasion is also on the claimant but the extent of the judicial bias favoring the defendant is stronger.

In some special cases, the standard is lower than a mere balance of probabilities which shifts the burden of persuasion to the defendant. For example, the Canadian law provides that a non-permanent resident may be expelled if the judge finds reasonable grounds to believe that he is a danger to Canada (Fluet, 2011). Notwithstanding a few exceptions, it seems more appropriate to focus on the standard of proof rather than on the burden of persuasion because it differs more often across countries and across cases, and it gives more precise results. Therefore in this section, I analyze the effect of the standard of proof on the cost of litigation. Moreover, in the normative analysis, I will consider cases in which the burden of persuasion is on the claimant which corresponds to a threshold at least equal to 50%. This encompasses the most common standards, but the results can be derived within this framework by placing the burden of persuasion on the defendant.

To the best of my knowledge, the standard of proof has not been analyzed as such in a model of litigation expenditure. However, Katz (1988) introduces in the contest success function a variable called the "exogenous merit of the case" which can be matched to the standard of proof. Using the same notations than in Section 3.1, a simplified form of Katz (1988) return function can be written:

$$f(x_p, x_d) = \frac{e^M x_p}{e^M x_p + x_d} \tag{3.11}$$

where the variable denoted M is a bias in favor of the plaintiff if M is positive and in favor of the defendant if it is negative. This variable is described as reflecting "the state of

the facts, the law and the average judicial attitude of the legal system as a whole" (Katz, 1988, p129). Thus, it can be explained on the one hand by the merit of the case, and on the other hand by a systematic judicial bias. Such a bias may come from rules of proof, and in particular from the evidentiary standard, which introduces an asymmetry between litigants within the contest.

Bernardo et al. (2000) explicitly deal with evidentiary rules and more specifically with legal presumptions, which is defined as "a legal device which operates in the absence of other proof to require that certain inferences be drawn from the available evidence." The authors use a rent-seeking game to model the litigation phase but it is embedded in a more general model accounting for the defendant's primary activity. The contest success function is close to that of Katz (1988) but the multiplying factor applies to the defendant's effort rather than to the plaintiff's effort, which can be written as follows: [13]

$$f(x_p, x_d) = \frac{x_p}{x_p + sx_d} \tag{3.12}$$

The variable of interest s measures a range of potential legal presumptions and it is argued that it reflects both the burden of production and the burden of persuasion. This specification is relevant to model the burden of persuasion (and the standard of proof) but I will argue that it fails to capture the two burdens at the same time (Section 4). With this specification, the likelihood ratio of the contest success function can be written as follows:

$$\frac{f(x_p, x_d)}{1 - f(x_p, x_d)} = \frac{x_p}{sx_d} \tag{3.13}$$

When $s = 1$, the most convincing of the two litigants is more likely to win the case which is consistent with the preponderance of the evidence. More generally, s means that the

13. In Bernardo et al. (2000), defendants are divided into two types depending on their primary activity.

claimant has to be "s times" as convincing as the defendant to have the same probability of success than his opponent. Thus, values of s exceeding one can be interpreted as more stringent standards toward the claimant and vice versa. Consider for example an evidentiary threshold of 80%. To convince the court at 80%, the claimant has to be four times as convincing as the defendant (80/20) which corresponds to $s = 4$. Thus, including a multiplying factor is a very intuitive way of modeling the standard of proof.

Another possibility to introduce asymmetry between parties would be to consider a Tullock (1980) function with different returns on effort (see Dari-Mattiacci et al., 2015):

$$f(x_p, x_d) = \frac{{x_p}^{\alpha}}{{x_p}^{\alpha} + {x_d}^{\beta}} \tag{3.14}$$

The parameter α (resp. β) corresponds to the claimant's (resp. defendant's) return on effort. Basically, the effect is similar in the sense that a rise in s or in $\frac{\beta}{\alpha}$ contributes to increase the defendant's marginal return and to reduce that of the adverse litigant. However, the specification given by (3.12) provides an intuitive interpretation of the parameter s.

3.2 Equilibrium

To derive the equilibrium, parties' expected utility functions are assumed to be the same as in the benchmark model (see equations (3.4) and (3.5)) but the contest success function is given by (3.12) where s is interpreted as the standard of proof. Each litigant chooses his litigation effort so as to maximize his utility function. At the equilibrium, the relative effort of the claimant is inversely proportional to his relative marginal cost ($\frac{x_p}{x_d} = \frac{c_d}{c_p}$), as in the benchmark model, and parties' choices of litigation expenditures are:

$$x_p^* = \frac{Jsc_d}{(sc_p + c_d)^2} \tag{3.15}$$

$$x_d^* = \frac{Jsc_p}{(sc_p + c_d)^2} \tag{3.16}$$

As in the benchmark model, there is no corner solution within this framework.

3.3 Effect of the standard of proof on individual efforts

The equilibrium allows to explore the relationship between the standard of proof and each litigant's effort using comparative statics. Let c be the ratio of the defendant's marginal cost to that of the claimant ($c \equiv \frac{c_d}{c_p}$). The following results can be derived:

Result 3.1.

(i) A variation of s affects both parties' expenditures in the same direction.

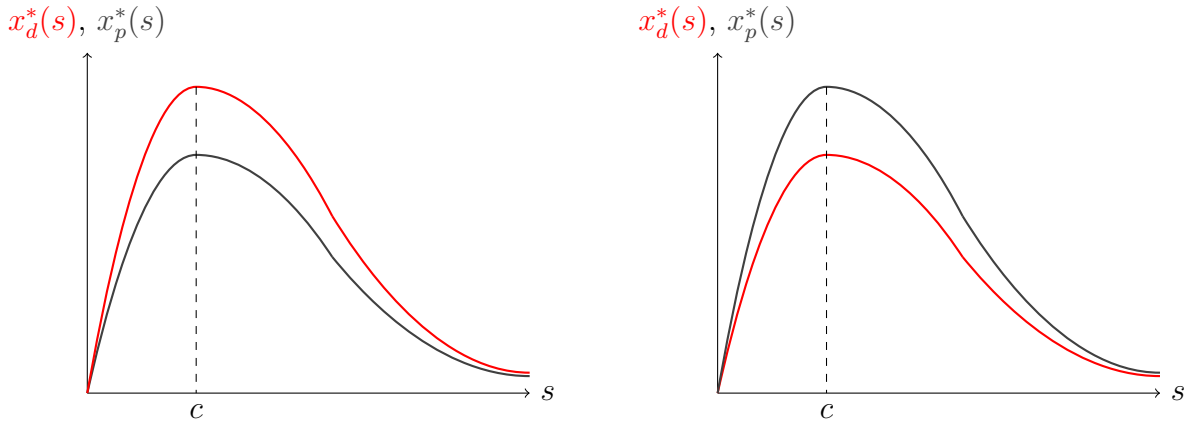
(ii) The litigant facing the lowest marginal cost exerts a higher effort than his opponent, irrespective of the standard of proof.

(iii) An increase in s encourages both parties to engage more legal expenses if $s \leq c$ and to reduce them otherwise.

To illustrate this result, both functions ${x_d}^*(s)$ and ${x_p}^*(s)$ are depicted in Figure 31. [14] It shows that parties adopt the same behavior (increasing or decreasing their effort) as the standard varies, in accordance with (i). Moreover, the ratio of marginal costs determines who among litigants spends the most. Graphically, one observes that the litigant facing a higher marginal cost displays a lower quantity of evidence than his opponent (ii): It is the

14. It can be shown that both functions display similar properties: Their second-order derivatives are positive for the same values of the standard of proof ($s > \frac{2c_d}{c_p}$), they equal to zero when s equals zero and they tend toward zero as the standard of proof tends toward infinity.

defendant who spends the most if $c \leq 1$ (see Figure 31 (a)), and the claimant otherwise (see Figure 31 (b)).



(a) $c \leq 1$ (b) $c > 1$

FIGURE 31 – Effect of the standard of proof on individual efforts

Taken together, points (i) and (ii) of the Result 3.1 suggest that, in a context of fierce competition between parties choosing simultaneously their litigation effort, a change in the evidentiary standard does not help the social planner to differentiate between parties. However, the standard of proof appears as a tool to regulate the total amount of legal expenses since it is shown to strongly affect parties' choices of effort (iii). For low values of the standard, a marginal increase pushes both parties to invest more. Up to a certain point (which depends on parties' litigation costs) both parties reduce their effort as the standard of proof increases. This result is consistent with Bernardo et al. (2000) who find that litigation expenditures are higher when legal presumption is set at an intermediary level, because the legal rule is "more contestable by either party" (Bernardo et al. 2000, p14).

3.4 Normative implications

In this section, the main standards used in civil matters are compared from a cost perspective. The preponderance of the evidence (hereafter denoted s_L because it is the lowest one I consider) implies that the litigant with the most arguments is the most likely to win the case. In the model, it corresponds to a standard of proof s equals to unity. Continental European courts apply a harsher standard (hereafter denoted s_H) which is close to full conviction. In what follows, I consider a standard of proof of 90% which is the lowest estimation of the evidence threshold in civil law countries (Schweizer 2013). Applied to our setting, it means that the claimant has to be at least nine times (90/10) as credible as the defendant to be more likely to win the case. Finally, I consider an intermediate standard of proof of 80% denoted s_I corresponding to $s = 4$ (80/20). It may reflect for example the clear and convincing evidence standard applicable in the USA for some special cases. Thus, the following assumptions are made:

$$s_L = 1; s_I = 4; s_H = 9 \tag{3.17}$$

Let T be the total litigation cost (T). At the equilibrium, T can be written: [15]

$$T^* = c_p x_p^* + c_d x_d^* \tag{3.18}$$

Figure 32 represents the total cost as a function of the marginal costs ratio, for the three values of s that are studied in this section. [16] Each of these functions displays similar pro-

15. Note that the total litigation cost differs from the rent dissipation usually examined in the rent-seeking literature, and which is equal to the sum of parties' efforts ($x_d + x_p$). In the judicial context, it is relevant to focus on the cost of litigation which is generally considered as one of the main welfare criteria.

16. The function is depicted for $J = 10$ but a change in the value of the recovery does not modify the findings reported here.

perties than functions $x_d^*(s)$ and $x_p^*(s)$ and reaches its maximum when the standard of proof equals the ratio of marginal costs ($s = c$). Below (resp. above) this threshold, an increase of the standard of proof positively (resp. negatively) affects the cost of litigation. The general intuition for this result is that a "balanced" standard of proof has little impact on parties' expected utilities. Therefore such a standard makes parties more aggressive because they are on a relative equal footing and they hope to win the case. On the contrary, an extreme standard of proof tends to mitigate competition because it leaves one of the litigants with very few chances of winning the case, thus discouraging litigants from engaging legal expenses. The following results can be derived by comparing the total cost of litigation with the three different thresholds:

Result 3.2.

(i) The preponderance of evidence induces maximal legal expenses when parties face identical marginal costs.

(ii) The preponderance of evidence standard leads to the lowest level of legal expenses when the claimant has a substantial cost advantage ($c > 3$). Otherwise, the full conviction standard is the best standard to minimize litigation costs.

(iii) The intermediate standard is never the best among the three standards studied to minimize litigation costs, irrespective of the ratio of marginal costs.

If parties face identical marginal costs ($c = 1$), the amount of legal expenses is maximal with the preponderance of evidence (i). Indeed, in this context, the preponderance of evidence is neutral and leaves litigants in a symmetric situation. Therefore, the return on effort is maximal because a small increase of their expenses may strongly increase their

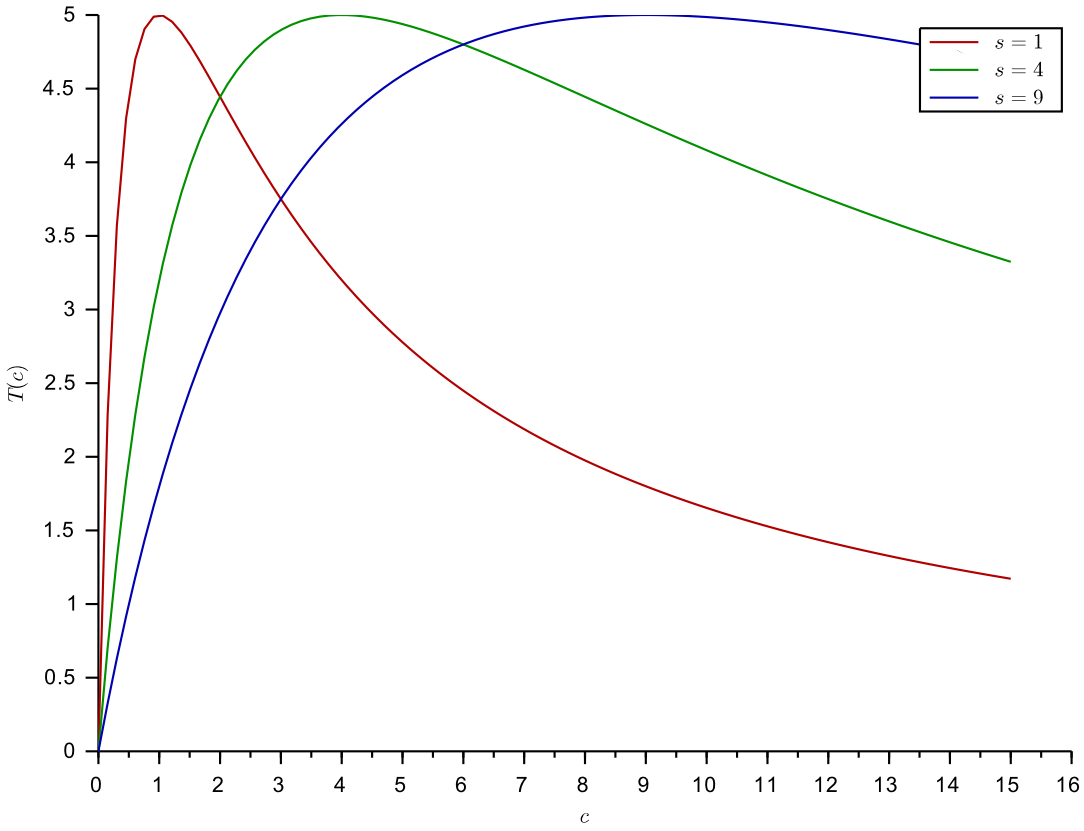


FIGURE 32 – Total cost of litigation with three different standards of proof

winning probability. This leads both parties to engage substantial legal expenses to stay in the race. In the present setting, the total of parties' expenditures corresponds to half the recovery ($T = J/2$) to win the case. By contrast, the harshest standard is the best to minimize the cost of litigation when parties face identical marginal costs because of the much lower return on effort.

Consider now the case of asymmetric marginal costs. If the defendant's marginal cost is inferior to that of the claimant ($c \leq 1$), it follows from the point (ii) that the highest

standard of proof leads to fewer expenses than the preponderance of evidence. Indeed, in that case the defendant has an initial cost advantage and each of the three standards studied contributes to heighten his advantage. Therefore, the higher the standard of proof is, the more the defendant's position is reinforced and the lower is the marginal effect of parties' effort choices on the outcome of the case. As in the case of identical costs, the preponderance of evidence induces the highest level of expenditures even if its amount is lower than with symmetric costs.

The comparison between the three standards is less straightforward when the claimant has a cost advantage ($c > 1$). In this case, each litigant has an advantage at a certain point of the trial process: The claimant benefits from the discovery process due to his cost advantage and the defendant is favored by the judicial decision-making since the three standards are at least equal to unity. The comparison between the different thresholds depends on the magnitude of the claimant's cost advantage relatively to the magnitude of the pro-defendant judicial bias. The total cost of litigation tends to be reduced as one of these two biases strongly exceeds the second one. More specifically, for low values of c ($c \leq 3$), the claimant's cost advantage is sufficiently small so that the full-conviction standard generates a strong bias in favor of the defendant. When c takes higher values ($c > 3$), the 90%-standard fails to create a sufficiently strong asymmetry in favor of the defendant. In that case, the effect of the cost asymmetry favoring the claimant exceeds the effect of the pro-defendant judicial bias through the standard of proof. Therefore, when the defendant's marginal cost is at least three times that of the claimant, the preponderance of evidence is the best standard to minimize litigation costs.

Finally, the point (iii) of the Result 3.2 highlights the fact that an intermediate standard is never optimal to reduce the sum of the costs incurred by parties. According to the

present analysis, such standard cannot be justified on the basis of the cost of litigation. Extreme standards always appear as better tools to minimize parties' expenditures. A more comprehensive normative reflection including accuracy and equity between litigants is required to appreciate the role of intermediate standards.

4 The burden of proof

4.1 Modeling the burden of proof

The burden of production is often associated to the burden of persuasion and both constitute the burden of proof. This section focuses on the burden of production that determines "which litigant has the duty to come forward with evidence in court" (Bernardo et al., 2000). Two interpretations of this rule emerge from the existing literature in Law and Economics. It can first be analyzed as the rule determining who wins the case if no evidence is introduced (Hay and Spier, 1997; Sanchirico, 2008; Shin, 1994). The implicit assumption made in that case is that the assertion "the litigant X has to present evidence" is equivalent to "the litigant X loses the case if no evidence is introduced". With this assumption, the burden of production is modeled as a rule specifying the outcome of the case under some circumstances. However, it should be remembered that in practice, the burden of production regulates parties' behaviors during the pretrial stage and not that of the judge when deciding a case.

The assumptions made in the benchmark model fail to capture this interpretation. Indeed, the contest success function (see equation (3.1)) is such that a litigant loses the case if he does not present any evidence, but only if his opponent invests a positive amount. If both parties' expenditures uniformly tend to zero, the claimant's limiting probability

of winning the case is equal to 1/2. Therefore, the outcome of the case in the absence of evidence results from a random sampling which differs from the definition above.

To account for legal presumptions, Bernardo et al. (2000) introduce a multiplying coefficient to the defendant's effort into the benchmark function (see equation (3.12)). The authors assume that this specification reflects the burden of production together with the burden of persuasion. Indeed with this specification, the claimant's winning probability tends toward $\frac{1}{1+s}$ when neither party comes with evidence, and more generally when parties are equally credible. If the burden of production determines who is the winner when neither litigant presents evidence, the burden of production is on the defendant when $s = 0$ and on the claimant when s approaches infinity.

However, this specification strongly links both burdens in a way which is not representative of the reality. With this setting, giving the burden of *production* to the claimant (with s tending toward infinity) is the same as giving the burden of *persuasion* to the claimant (since $s > 1$) but it also implies an extreme standard of proof (close to 100%) in favor of the defendant. Conversely, the standard of proof is automatically close to 0% when the burden of production is on the defendant ($s = 0$). In practice, both burdens most often fall on the same party (Sanchirico, 2008) but the standard of proof may be more balanced: It is generally far from infinity and may even be close to 50% which corresponds to the preponderance of evidence.

As discussed in Section 3.1, the multiplying factor introduced by Bernardo et al. (2000) fits well with the definition of the standard of proof. Indeed, it allows to analyze the marginal effect of a variation in a continuous variable influencing the court's decision. Nevertheless, it does not capture well a binary rule like the burden of production. This rule

is by nature extreme because it determines the winner if no evidence is introduced, and the different nature of both burdens can hardly be reflected in a single variable. In order to gain a better understanding of evidentiary rules, it is necessary to disentangle the two burdens and to model them in a different way.

In what follows, I will consider a second interpretation of the burden of production. This rule can also be viewed as a way to organize the timing of the discovery process by which parties submit evidence to their adversary and to the court. The time factor plays an essential role during this phase, and parties generally bring evidence in a sequentially way. For example, Hirshleifer and Osborne (2001) state that "the time-sequence of events makes it more plausible for Plaintiff to be the leader" but they do not justify this assumption using evidentiary rules. Yet, the sequential nature of the judicial process has to be tied to the burden of production. For example, it follows from the French Civil Code [17] that the claimant has to prove the alleged facts. In practice, it implies that he has to come with some pieces of evidence at first, and then it is the defendant's turn to introduce his own pieces. Thus, the burden of production oscillates between parties during the evidentiary process. Furthermore, the burden is sometimes shifted to the defendant by the judge or the legislator. In such cases, the defendant is charged with it at the outset of the trial but it still oscillates between parties during the discovery.

In what follows, I retain this second interpretation of the burden of production which is also mentioned by Talley (2013) who considers the burden of production as a rule that "regulates the sequential process by which pieces are provided to the fact-finder". It does not contradict the first interpretation mentioned above. If the burdened litigant loses if no

17. In its article 1315 (sub-paragraph 1).

evidence is introduced, then the unburdened litigant has no interest to bear legal expenses until the burdened litigant has presented his own evidence (Hay and Spier, 1997). Thus, the unburdened party never plays at first while the burdened party is forced to present evidence at first because he would otherwise lose the trial.

In the benchmark model, it has been assumed that each litigant decides on its litigation effort simultaneously, and neither can gain from a unilateral switch at the equilibrium, which corresponds to the Nash-protocol. To account for the burden of production, the trial phase is modeled as a Stackelberg game in which the burdened litigant is the leader. Therefore, the burden of production forces one party —the burdened one— to pre-commit. This way of modeling helps to justify the assumptions made on the solution concept applied and makes it possible to discriminate between the two burdens of proof.

4.2 Equilibrium

Equilibrium litigation choices are characterized under the same assumptions than in the benchmark model, except that parties play sequentially. If the claimant has the burden of production, he is the first to choose a litigation effort and the defendant responds lastly. Reasoning backward induction, the defendant's best reply is first determined and is identical to that of the benchmark model (see equation (3.7)). If the burden is on the defendant, the claimant's best reply is defined by the equation (3.6) and the defendant maximizes his utility accordingly. At the equilibrium, the value of parties' litigation efforts depends on the identity of the burdened party and on the marginal costs ratio. The solutions of the game are summarized in Table 14 where c denotes the ratio of marginal costs ($c \equiv \frac{cd}{cp}$):

As with the Nash-protocol, the structure of the costs plays a major role in determining parties' litigation efforts at the equilibrium. The influence of the marginal costs ratio is

Burdened litigant	$\mathbf{c \leq \frac{1}{2}}$	$\mathbf{\frac{1}{2} < c < 2}$	$\mathbf{c \geq 2}$
Claimant	$x_p^* = \frac{Jc_d}{4{c_p}^2}$ and $x_d^* = \frac{J(2c_p - c_d)}{4{c_p}^2}$		$x_p^* = \frac{J}{c_d}$ and $x_d^* = 0$
Defendant	$x_p^* = 0$ and $x_d^* = \frac{J}{c_p}$	$x_p^* = \frac{J(2c_d - c_p)}{4{c_d}^2}$ and $x_d^* = \frac{Jc_p}{4c_d^2}$	

TABLE 14 – Litigation efforts at the equilibrium

even stronger since it affects parties' strategies. When the claimant bears the burden of production and has a significant cost advantage ($c > 2$), he is able to deter the defendant from engaging legal expenses at a relatively low cost. Conversely, the burdened defendant easily discourages the claimant from coming with evidence if $c < \frac{1}{2}$. Mathematically, corner solutions are allowed when there is a significant gap between parties' marginal costs in favor of the burdened litigant. Otherwise, both parties choose a strictly positive level of effort.

4.3 Effect of the burden of proof on individual efforts

The comparison of the efforts with and without a time-sequence is described in Result 3.3 and summarized in Table 15. [18]

Result 3.3.

(i) The introduction of a time-sequence does not affect parties' litigation efforts when they face the same marginal cost.

(ii) The introduction of a time-sequence decreases the burdened litigant's legal expenses

18. In Table 15, an increase (↑) means that the litigant brings more evidence than in the Nash game while a decrease (↓) reflects a lower effort in the sequential game.

if his marginal cost is lower than that of his opponent, and increases it otherwise.

(iii) The introduction of a time-sequence decreases the unburdened litigant's expenses.

Burdened litigant	$\mathbf{c < 1}$	$\mathbf{c = 1}$	$\mathbf{c > 1}$
Claimant	$x_p^* \downarrow$ and $x_d^* \downarrow$	x_p^* and x_d^* remain	$x_p^* \uparrow$ and $x_d^* \downarrow$
Defendant	$x_p^* \downarrow$ and $x_d^* \uparrow$	constant	$x_p^* \downarrow$ and $x_d^* \downarrow$

TABLE 15 – Comparison of individual efforts with the different protocols

It is first interesting to note that litigants' efforts are not affected by the introduction of a time-sequence when parties face identical marginal costs (i). However, the burden of production may increase or decrease their efforts depending on who faces the lowest marginal cost and who is assigned the burden of coming first with some pieces. Thus, the burdened litigant's effort is lower than in a simultaneous game when his marginal cost is higher than that of his opponent. However, if he is the low-cost agent, he exploits his cost advantage by investing more than in the Nash game. In short, the low-cost first-mover adopts an offensive strategy while the high-cost one is more defensive (ii).

Regarding the unburdened litigant, Table 15 shows that he engages fewer expenses with the introduction of a sequence than in a simultaneous game, irrespective of the ratio of marginal costs (iii). Two cases are possible: First, the unburdened may invest a positive amount but which is lower than in a simultaneous game. It happens when his marginal

cost is lower than that of his opponent, or when it is slightly higher. [19] In this case, playing as a second mover enables the unburdened litigant to better calibrate his effort. Second, the unburdened litigant may refrain from submitting evidence which happens if his cost is at least two times higher than that of his opponent. [20]

Overall, the introduction of a time-sequence allows parties to better calibrate their efforts. If he has a cost advantage, the burdened litigant exploits it by adopting an offensive strategy, but otherwise he chooses a lower effort than in a Nash game. The unburdened litigant, by playing at second, adapts his strategy by engaging fewer expenses than in the Nash game.

4.4 Normative implications

The purpose of this section is twofold. First, I seek to determine whether it is relevant from a cost perspective to introduce a sequence in the timing of the fact-finding process. The second objective is to determine the optimal allocation of the burden of proof, as defined by the sequence which is the most prone to minimize legal expenditures. To achieve these aims, I compare the total litigation cost denoted T and defined by equation (3.18) in three cases: When parties play simultaneously (T_N), when the claimant is given the burden (T_P) and when the burden is reversed on the defendant (T_D). The results of the comparison are summarized in Result 3.4 and illustrated by Figure 33. [21]

19. More precisely, the burdened claimant (resp. defendant) invests a positive amount if $c < 2$ (resp. if $c > \frac{1}{2}$). See Table 14.

20. It is the case when $c \geq 2$ if the burden is on the claimant, and if $c \leq \frac{1}{2}$ otherwise.

21. The function is again depicted for $J = 10$ but a change in the value of the recovery does not modify the results.

Result 3.4.

(i) The Nash-protocol never leads to the lowest cost of litigation.

(ii) The time-sequence may lead to higher legal expenses than the Nash equilibrium.

(iii) To minimize the litigation costs, the burden of production ought to be placed on the litigant facing the higher marginal cost.

The first point is that the Nash equilibrium never leads to the lowest litigation cost, whatever the structure of the marginal costs (i). When parties simultaneously choose their litigation efforts, they tend to commit large amount of resources. With a sequence, it is easier to fine-tune the required level of expenses, specifically for the second mover. Therefore, the burden of proof can be seen as a mean to mitigate litigation costs. This result provides a rationale for the social planner to implement a sequence during the discovery process.

However, introducing a sequence is not sufficient to minimize the cost of a contest (ii), since legal expenses may be higher with a sequence than under the Nash-protocol. For example, placing the burden on a litigant whose marginal cost is much lower than that of his opponent induces a rise in the cost of litigation compared to the Nash game. In this case, the burdened litigant takes advantage of his first-mover position by bringing a large amount of evidence to discourage his opponent from investing. Even if his adversary withdraws from the competition, it leads to higher litigation costs than in a simultaneous game. Therefore, the assignment of the burden of proof has to be done in a proper way in order to minimize litigation costs.

The third point (iii) of the Result 3.4 determines the way the burden of production should be allocated to mitigate parties' incentives to engage legal expenses. It can be

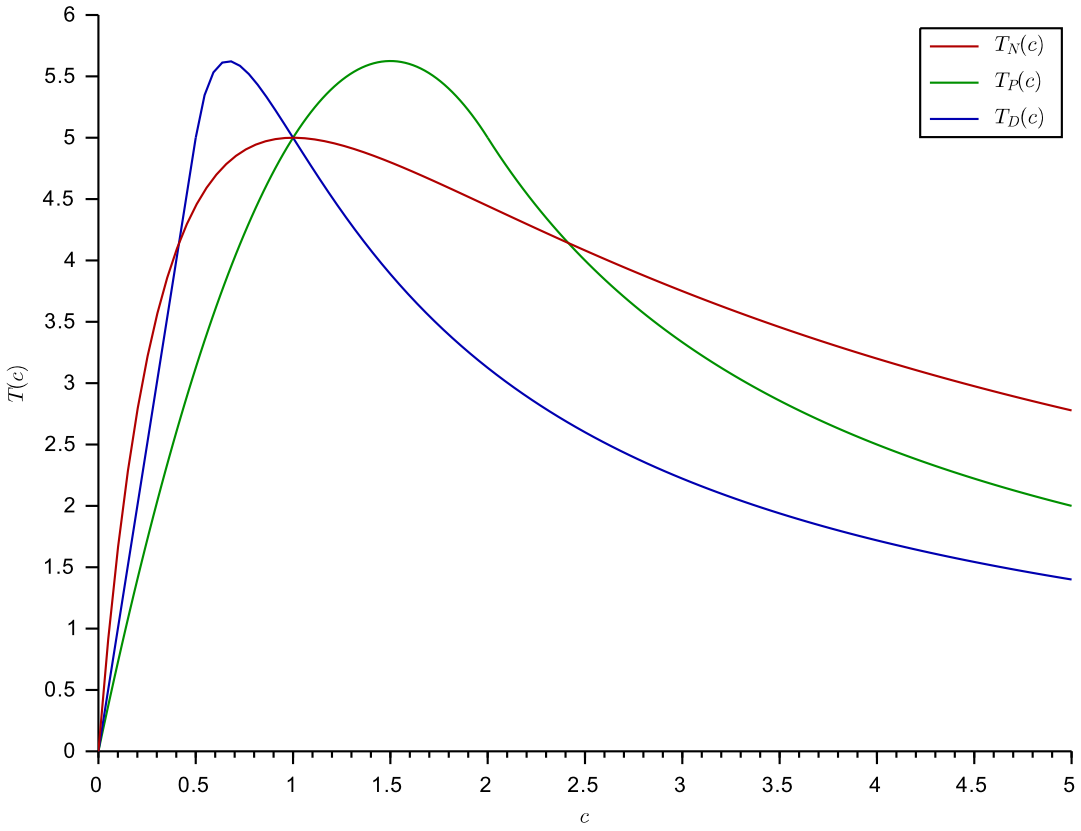


FIGURE 33 – Total cost of litigation with the Nash and the Stackelberg protocol

derived from the model that the total litigation cost is the lowest when the burden of proof is on the high-cost litigant. This allocation prevents the burdened party from adopting an offensive strategy aiming at discouraging the unburdened party from bringing evidence. If the burden is on the high-cost litigant, the first player spends less than in a simultaneous game, and the unburdened litigant responds with a positive amount of evidence which is inferior to the litigation effort he would have chosen in a simultaneous game.

5 Conclusion

In this chapter, a rent-seeking framework has been developed to model the standard of proof and the burden of production and to examine the effect of these rules on the cost of litigation. The model demonstrates that these rules of proof play a critical role in determining parties' legal expenditures. Comparing a 50% with a 90%-standard, the model shows that the harshest threshold leads to a lowest litigation cost except when the defendant faces a very high marginal cost compared to that of the claimant. Furthermore, an intermediary standard always induces more legal expenses than (at least) one of the two standards mentioned above. The burden of proof, which is apprehended as a rule determining the timing of evidence submission, is shown to affect parties' choices of expenditures only if they face asymmetrical costs. If so, placing the burden on the high-cost litigant helps to prevent from an escalation in costs.

To gain a better understanding of evidentiary rules, examining litigants' incentives when the two rules govern the trial process at the same time could be an interesting avenue of research. Moreover, the analysis made here only accounts for the cost of litigation, but other welfare criteria may provide a rationale for various rules and have to be addressed into a more comprehensive approach.

4 The Strategic Choice of a Defense in Civil Proceedings

1 Introduction

1.1 Motivation

This chapter deals with the strategies implemented by defendants' to defend their position in court. Basically, after being sued, a defendant has to decide between two types of defenses. He can first deny the claimant's allegations by proving the non-existence of the facts invoked by the claimant. He can also admit the facts underlying the claimant's position while asserting new facts or circumstances which, if proven, will prevent the claimant from winning the case. Such defenses apply in virtually all areas of law including tort or contract litigation. Consider the following examples:

(i) In a product liability case, a firm has the possibility to assert that the claimant's injury has been caused by misuse of the product instead of supporting that the sold goods were risk-free.

(ii) In a contract dispute over a breach of contract, the defendant can argue that the

contract is illegal rather than challenging the breach of it.

(iii) In a patent infringement litigation, the defendant can challenge the patent's validity of the claimant-patentee instead of refuting infringement.

(iv) In a personal injury dispute, the contributory negligence rule allows the defendant to be exempted of liability if he proves that the claimant's behavior has contributed to the injury.

In all of these examples, the defendant has the possibility to counter the claimant's position by asserting new facts. Such defenses are called affirmative defenses in the common law tradition and imply a "fact or circumstance that defeats the plaintiff's claim, even if the plaintiff can prove every contention alleged in the complaint" (Kerley et al., 2012). In the US federal courts, a partial list of affirmative defenses applies and can be found in the Federal Rules of Civil Procedures. [1] By contrast, a negating defense is a rebuttal to the claimant's position. The concepts of "affirmative" and "negating defense" are not defined in the law of all countries, but the legislations provide numerous defenses meeting this definition within each particular area of the law.

This chapter examines the incentives of a representative defendant to mount an affirmative defense rather than denying the claimant's position. A key consequence between these two defenses lies in the nature of evidence that must be provided by parties. Taking the point (iii) above, in an infringement action, the defendant has to prove non-infringement in case of negating defense while he must prove the patent invalidity in the opposite case. The evidence required is dependent on the chosen defense and, consequently, the merit of the two defenses may also differ.

1. Rule 8 (c).

No less importantly, the choice of a defense defines the allocation of the burden of proof. In civil matters, it is generally the claimant who (initially) bears the burden of proof, but this burden is shifted to the defendant asserting an affirmative defense, which has two consequences. First, the defendant has to come with evidence at first because he has the *burden of production* (or burden of going forward) that "regulates the sequential process by which pieces are provided to the fact-finder" (Talley, 2013). [2] Second, the *burden of persuasion* also moves to the defendant and requires him to be sufficiently convincing to persuade the judge. The reversal of these two burdens —the two forming the burden of proof— is likely to influence the defendant's choice of a strategy.

In this chapter, a particular attention is paid to the role of two parameters that are likely to influence the choice of a defense. First, the emphasis is put on the defendant's unitary cost of producing evidence as compared to the claimant's cost. This ratio of costs may differ between the two defenses, and reflects, at least to a certain extent, the merit of each defense. [3] However, it may also be biased in favor of one litigant who benefits from a better access to evidence and information. With these two interpretations in mind, the following issues are addressed in this chapter: (i) Which defense is chosen by the defendant if his cost-(dis)advantage is the same regardless the chosen defense? (ii) If one defense gives him a higher cost advantage (or a lower cost-disadvantage), does the defendant always choose that defense?

2. It does not mean that his adversary is exempted to bring evidence. Indeed, this burden oscillates between parties throughout the trial process and the claimant will subsequently have to come with evidence (Talley, 2013).

3. See for example Sanchirico (2008).

Second, the burden of proof —which is shifted to the defendant if he raises an affirmative defense— is also studied as a determinant of the choice of a defense. In particular, the standard of proof, which is the level of evidence required to meet the burden of persuasion, may vary widely across cases and has a strong influence on the defendant's decision. Civil law countries are known to apply a higher standard than common law countries (Clermont and Sherwin, 2002), and this standard may also differ according to the defendant's advanced defense. For instance, in US patent litigation, the claimant alleging infringement has to be more convincing than the defendant to win the case (preponderance of evidence) while the defendant is required to bring "clear and convincing evidence" if he challenges the patent's validity (Ford, 2013). This asymmetry between parties —and therefore between the two defenses— is subject to a debate in the USA which will be discussed in Section 4.

The analysis of the defendant's choice of a defense is of interest from several standpoints. First, it affects the evidentiary process and the outcome of the trial. Therefore, the defense strategy has a significant impact on numerous parameters of interest usually studied in economics of litigation, including the cost of litigation and parties' propensities to sue and to negotiate. Accounting for the defendant's choice of a defense in theoretical models may help to move toward a better understanding of parties' behaviors during the trial process.

Secondly, the present study indicates to which extent there is a selection effect limiting the subset of cases that are decided by courts. For instance, there is a low percentage of US infringement actions terminating through patent invalidation rulings. It can be explained by defendants' defense strategies: defendants' may be reluctant to challenge the validity of the patents and might prefer to choose another defense. Such an effect must be accounted for in empirical studies on litigation when interpreting statistics on the outcome of cases.

This paper aims at highlighting the circumstances under which such effect is likely to occur.

Third, the choice of a defense and the resulting potential selection effects have to be part of a normative analysis aiming at evaluating the ability of a judicial system to enforce the law, which is its primary purpose. Enforcing the law does not only mean encouraging firms or individuals to sue after having suffered damages. Indeed, even if the underlying facts asserted by the claimant are true, his behavior may also be reprehensible. To deter economic agents from engaging unlawful activities, it is also necessary to understand the reasons why defendants raise affirmative defenses and to give them adequate incentives to do so.

Fourth, this paper is also of interest with regard to the literature on evidence, and more especially the literature on the burden of proof. Within this literature, evidentiary rules are studied formally as exogenous parameters or as variables set by a social planner. In the present chapter, the burden of proof is set as a consequence of the defendant's choice of a defense. To my knowledge, there is no paper analyzing the effect of parties' strategies on the rules governing the discovery of evidence.

1.2 Methodology and main results

A rent-seeking model *à la* Tullock (1980) is developed to model judicial proceedings, the central assumption being that each party can increase his expected utility by expending a higher effort. In the judicial context, parties' effort can be interpreted as a body of evidence supporting the position of the litigant who exerts it. Evidence may take the form either of pieces of information obtained for example through testimony or of a persuasive argument made by attorneys. Obtaining such evidence requires some legal expenses like attorneys' fees or other fees incurred to prove the facts. Therefore, rent-seeking games constitute a

useful tool to describe the evidentiary process. [4]

Furthermore, rent-seeking games provide the possibility to incorporate evidentiary rules into the analysis. In this chapter, the rules are modeled in the same way as in Chapter 3. Specifically, the burden of production determines the sequence of the game so that the burdened litigant is the first to submit evidence. The burden of persuading the court intervenes at the end of the discovery process, and takes the form of a bias in the contest success function describing parties' likelihood of success. Thus, the defendant's choice of a defense determines the sequence of the game as well as the side and the extent of the judicial bias.

This framework allows providing some insights into the choice of a defense in civil proceedings. First, the defendant is found to be indifferent between the two defenses if litigants face identical marginal costs of producing evidence and if the burden of persuasion is equally shared between them. [5] From this, assumptions are relaxed, firstly to account for asymmetric marginal costs between litigants. Not surprisingly, if for one defense, the defendant has a higher marginal cost than that of the claimant, and a lower marginal cost for the other defense, he asserts the defense for which he has a cost advantage. However, more surprising is that he may raise the defense for which he has the lowest cost advantage if his marginal cost is lower than that of the claimant regardless of the defense raised. Conversely, for some values of the parameters, the defendant who faces higher marginal costs with the two defenses chooses the defense for which his disadvantage is the strongest.

The intensity of the burden of persuasion faced by the claimant in case of negating

4. See Chapter 3 for more details on the methodology used.

5. The burden of persuasion is equally shared when the standard of proof applying is the preponderance of evidence.

defense and by the defendant raising an affirmative defense also affects the choice of a defense. The model intuitively suggests that increasing this burden encourages the defendant to deny the claimant's allegations. Indeed, the defendant prefers to deny the claimant's position if it is a difficult task for the claimant to prove his claim. Likewise, he is reluctant to raise an affirmative defense if it will be hard for him to convince the fact-finder.

These results are then applied to infringement suits, in which a claim is brought when a firm alleges another firm has violated one of its patents. According to Ford (2013), defendants tend to deny patentees' claims rather than challenging the validity of the patent, which explains why numerous existing patents are invalid in the USA. This chapter sheds some light upon this issue by investigating the conditions under which defendants argue non-infringement rather than challenging the patent's validity. The model shows that the defendant may negate the claimant's allegations even though his relative marginal cost of proving invalidity is lower than his relative marginal cost of proving non-infringement. However, this explanation is not sufficient to demonstrate that there is a generalized tendency to avoid challenging patents. Another explanation for this tendency can be found in Ford (2013), who argues that the defendant has a better access to evidence proving non-infringement, while the patent holder is in a better position to prove that his patent is valid. Taking this as an assumption of the model,[6] I find that it is never in the interest of the defendant to challenge the patent.

Furthermore, heavy burdens of persuasion tend to reinforce this tendency. Such heavy burdens of persuasion are the general rule in civil law countries. But, even in the USA, proving patent invalidity is a difficult task for defendants due to the clear and convincing

6. Specifically, the defendant is assumed to face a lower marginal cost of producing evidence than the claimant if he asserts non-infringement, and a higher marginal cost if he mounts an affirmative defense.

standard that prevails for this specific case. Defendants may therefore be deterred from challenging the validity of patents due to the high standard required to prove it, even in common law countries. In sum, this chapter identifies the cost of producing evidence and the burden of persuasion as two factors discouraging defendants to challenge patents in infringement cases, which is in line with the analysis of Ford (2013).

1.3 Related literature

The paper relates to the literature on economics of litigation. Within this literature, litigants' behaviors have been studied in many aspects. In particular there is an abundant literature on parties' incentives to settle once a claim has been brought (Bebchuk, 1984; Reinganum and Wilde, 1986) and to a lesser extent on victims' propensities to sue (Priest, 1989). Young et al. (2006) study the choice of defendants' defenses to escape liability in negligence but they focus on negating defenses. To the best of my knowledge, there is no theoretical papers integrating the choice of an affirmative defense into the analysis.

This paper is also linked to the literature on evidentiary rules and especially the burden of proof.[7] This literature seeks to determine how evidentiary rules must be designed to maximize one or several welfare criteria. To this respect, the standard of proof has been analyzed as a tool to mediate between the two types of judicial errors (Kaye, 1982; Davis, 1994) and to encourage potential tortfeasors to abide by the law (Lando, 2002; Demougin and Fluet, 2005, 2006; Ganuza et al., 2012). Hay and Spier (1997) define the optimal allocation of the burden of proof to minimize litigation costs while Shin (1994) develops a persuasion game to determine how the burden should be assigned so that a decision-

7. I take "burden of proof" in the broad sense, namely I encompass the identity of the litigant bearing the burden of production and the burden of persuasion but also the intensity of the burden of persuasion, which is captured by the standard of proof (see Chapter 3).

maker is able to extract all the relevant information from selectively produced evidence. [8] The burden of proof has also been analyzed with regard to the deterrence criterion by Bernardo et al. (2000) and Sanchirico (2008).

The present chapter distinguishes from this literature because the burden of proof results from the defendant's willingness to steer it strategically by choosing the defense which gives him the lowest expected loss. In addition, this chapter aims at accounting for the two burdens of proof by modeling them in a different way. In the existing literature, either the focus is on one burden (e.g. previously cited papers dealing with the standard of proof) or the two burdens are modeled in the same way (Bernardo et al., 2000) which does not allow to capture the different characteristics of this rule. [9]

The literature on litigation and on rules of proof does not specifically deal with affirmative defense, but there are some specific areas on which the subject has been studied. In particular, the present chapter relies on Ford (2013) who addresses this issue in the context of patent infringement litigation. Ford (2013) analyzes the tendency of defendants to argue non-infringement rather than asserting an affirmative defense. The arguments raised by Ford (2013) are part of a discussion following the model and devoted to this field (see Section 4). In tort law, contributory and comparative negligence cab be considered as two types affirmative defenses. They have been the subject of theoretical (Cooter and Ulen, 1986) and empirical works (White, 1989) but without focusing neither on the determinants of defendants' decisions nor on the reversal of the burden of proof resulting from the choice

8. See also Milgrom and Roberts (1986) and Froeb and Kobayashi (1996).

9. The major difference between these rules lies in the fact that they come into play at a different moment of the procedure. While the burden of production organizes the timing of the discovery of evidence (before the judgment), the burden of persuasion intervenes at the last moment, when the court weights the arguments of both sides to decide the case (see Chapter 3).

of a defense.

From a methodological point of view, this chapter is part of the rent-seeking literature. This literature has been applied to judicial contests by several scholars (e.g. Katz, 1988), and many extensions have been implemented to account for different features of legal systems. Among other rules, the rule allocating the cost of litigation between parties (Braeutigam and Panzar, 1984; Gong and McAfee, 2000), the possibility of punitive damages (Daughety and Reinganum, 2003), and the inquisitorial nature of the proceedings (Farmer and Pecorino, 1999; Parisi, 2002) have been incorporated into this framework.

The present chapter is built upon papers that introduce an asymmetry in players' effectiveness of effort, or in which players move sequentially (Dixit, 1987; Linster, 1993; Kohli and Singh, 1999; Hirshleifer and Osborne, 2001; Salkin, 2013; Dari-Mattiacci et al., 2015). A significant result first highlighted by Dixit (1987) is that the player who is the most (resp. less) likely to win the contest in a Nash game expends greater (resp. lesser) effort when playing first in a Stackelberg game than he would expend in a Nash game. Within this literature, Hirshleifer and Osborne (2001) and Salkin (2013) are the closest papers to this chapter since the rent-seeking framework is applied to a legal battle in which parties move sequentially and display different abilities to convert their effort in outcome.

This chapter mainly differentiates in two respects from the rent-seeking literature: First, the focus is not on the rent-seeking game in itself but on the defendant's incentives to move toward one rent-seeking game rather than another, each of this game representing a different defense strategy characterized by a different sequence and by a difference in parties' effectiveness of effort. Second, the paper gives a new sense to the asymmetries that are postulated in each rent-seeking game: The sequence of the game is function of the burden

of producing evidence, and parties' effectiveness of effort results from the allocation and the degree of the burden of persuasion. These interpretations cast new light on rent-seeking models applied to the judiciary, and in this respect, the paper aims at deriving results with regard to the burden of proof which is an essential feature of the evidentiary process.

The chapter develops as follows. Section 2 presents the model. The defendant's choice of a defense is studied in Section 3. After deriving the benchmark model, I analyze the role of parties' relative costs of litigation (Section 3.2) and that of evidentiary rules (Section 3.3) as determinant of the defense. The model is applied to patent litigation in Section 4 and Section 5 concludes.

2 Model

2.1 The framework

2.1.1 The course of the game

I consider a civil dispute in which the claimant P has brought a claim alleging that the defendant D has committed an unlawful act denoted A. The two litigants are perfectly informed and are risk-neutral. Once P has filed a complaint, D has the choice between two defenses: He may either adopt a negating defense, consisting of denying the charges against him ("A did not happens"). He may conversely assert an affirmative defense. In that case, he admits that the facts supporting the claim A are true but he responds to P's allegations by introducing new evidence alleging other facts or circumstances denoted B that, if proven, defeat P's claim.

At that point, two comments need to be made. First I assume that D cannot pursue the

two defenses simultaneously. In practice, D generally focuses on a single defense. Indeed, his claim has to be consistent to be likely to be successful, and the two defenses are generally incompatible. [10] Moreover, pursuing both defenses induces a very high marginal cost of litigation which is worthwhile only if the winning probability significantly increases. Second, D chooses his defense *before* parties begin to gather and submit evidence. This is generally the case in practice. For example in the UK, the defense against an infringement action must be filed after the claim form has been served and before the case management conference that initiates the evidentiary process (Cremers et al., 2013). [11]

Once the defendant has chosen his defense strategy, the discovery process begins and is organized differently according to the defense chosen by D. If D argues a negating defense, each party has to come with evidence supporting the (non-)existence of fact A. Moreover, the burden of production stays on P, which means that P has to come first with his own pieces of evidence before D replies. By contrast, in case of affirmative defense, the burden of production is reversed and D has to submit evidence to support the fact B before P replies. These assumptions are summarized in Figure 34 that represents the course of the game.

2.1.2 Parties' expected utility function

By suing D, P hopes to obtain a financial compensation J from D. However, P receives no compensation (and D wins nothing) if he loses the trial. The court decides the case

10. Ford (2013) provides some arguments to explain why defendants choose a single defense. His analysis deals with patent litigation but also applied for other types of litigation.

11. The case management conference aims at giving parties some directions "for the further conduct of the action, including disclosure of information or experiments, and the hearing date for trial is usually set" (Cremers et al., 2013).

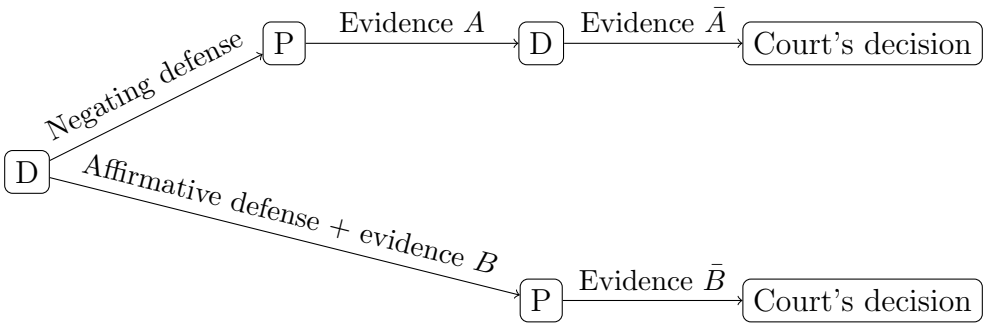


FIGURE 34 – Extensive form of the game

based on the evidence submitted by parties at the end of the discovery process, which is modeled as a rent-seeking Tullock game. P's winning probability, called the "contest success function" by Hirshleifer and Osborne (2001), is denoted f and is function of two endogenous variables: The resources spent by P to produce evidence ($x_p \geq 0$) as well as legal expenses engaged by D ($x_d \geq 0$):

$$f^i(x_p^i, x_d^i) = \frac{x_p^i}{x_p^i + s^i x_d^i} \tag{4.1}$$

The superscript i denotes the defense chosen by D with $i = N$ in case of negating defense and $i = A$ if D has raised an affirmative defense. Not only does the outcome of the trial depends on parties' efforts but also on an exogenous parameter $s \geq 0$ whose value also depends on D's defense. This parameter reflects the burden of persuasion (who has to persuade the court) as well as the standard of proof (how firmly has the court to be convinced). When $s = 1$, the more convincing of the two litigants is more likely to win the case, which corresponds to the preponderance of the evidence that applies in most civil cases in the common law tradition. More generally, s means that P has to be "s times" as convincing as D to have the same probability of success than his opponent. Thus, the burden of persuasion is said to be on P when s exceeds one and on D otherwise. The

closer is s to one, the less stringent is the standard of proof. The burden of persuasion is generally on P but is shifted to D if he pursues an affirmative defense. Therefore I make the following assumption:

$$s^A \leq 1 \leq s^N \tag{4.2}$$

Finally, it should be noted that the contest success function given by (4.1) implies that each party can increase his probability of success by increasing his effort ($f'_{x_p} > 0$ and $(1-f)'_{x_d} > 0$) but the marginal return on effort is decreasing ($f''_{x_p} < 0$ and $(1-f)''_{x_d} < 0$).

Increasing one's probability of success comes at a certain cost for the litigants. Their marginal costs of introducing new evidence are written $c_p^i \geq 0$ (for P) and $c_d^i \geq 0$ (for D). They may differ between parties and also according to D's defense. The marginal cost is assumed to be constant: Each new piece of evidence induces the same increase in legal expenses. [12] By interpreting the results, I will consider that marginal costs are function of two parameters. First one expects litigants' marginal costs to be low when the merit of the case is high (see e.g. Sanchirico, 2008). Secondly, some facts may be more difficult to prove than others regardless of the merit of the case. This may result from a problem of evidence unavailability or from timing effects which may force one litigant to prepare quickly the trial while his opponent has much more time to collect evidence. With all these assumptions, parties' expected utilities are written:

$$\begin{cases} EU_d^i(x_d^i) = -f^i(x_p^i, x_d^i)J - c_d^i x_d^i \\ EU_p^i(x_p^i) = f^i(x_p^i, x_d^i)J - c_p^i x_p^i \end{cases} \tag{4.3}$$

12. Considering that all units of evidence are equally convincing.

where f^i is defined by (4.1). To simplify notations, I will assume that $J = 1$ without any loss of generality for the rest of the chapter.

2.2 Equilibrium of the discovery process

2.2.1 The defendant raises a negating defense

If D denies P's allegations, P has to brought evidence supporting his position that the fact A has occurred. D then answers with his own pieces of evidence. Reasoning backward induction, D chooses his effort by taking P's effort as given.

$$\min_{x_d^N} \frac{x_p^N}{x_p^N + s^N x_d^N} + c_d^N x_d^N \tag{4.4}$$

D's best reply is written as follows and is represented on Figure 35:

$$x_d^N(x_p^N) = \begin{cases} \sqrt{\frac{x_p^N}{c_d^N s^N}} - \frac{x_p^N}{s^N} \text{ if } x_p^N < \frac{s^N}{c_d^N} \\ 0 \text{ otherwise} \end{cases} \tag{4.5}$$

For small values of x_p^N ($x_p^N < \frac{s^N}{c_d^N}$), D responds with a positive effort. If $x_p^N < \frac{s^N}{4c_d^N}$, a higher x_p^N encourages D to exert a higher level of effort (x_d^N also increases). Up to a certain point ($\frac{s^N}{4c_d^N} \leq x_p^N < \frac{s^N}{c_d^N}$), D reduces his effort as x_d^N increases. If P exerts a very high effort ($x_p^N \geq \frac{s^N}{c_d^N}$), D's marginal benefit of spending resources is lower than his marginal cost and D refrains from investing (corner solution). P maximizes his expected utility function by anticipating D's best response.

$$\max_{x_p^N} \frac{x_p^N}{x_p^N + s^N x_d^N(x_p^N)} - c_p^N x_p^N \tag{4.6}$$

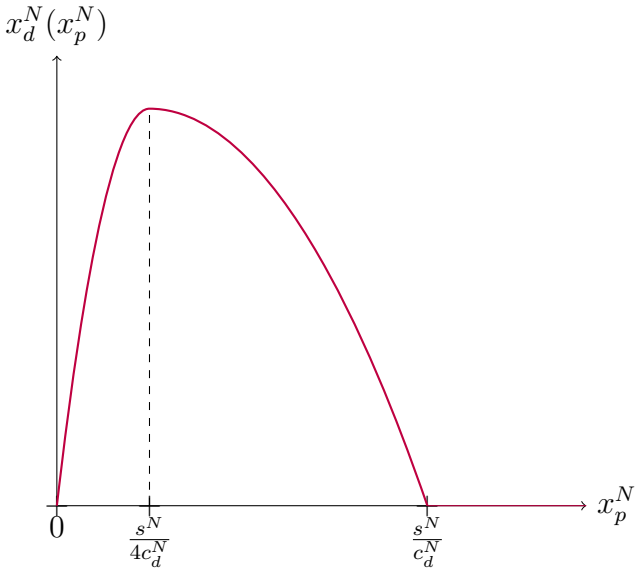


FIGURE 35 – The defendant's best reply

where $x_d^N(x_p^N)$ is defined by equation (4.5). The maximization of the function (4.6) gives P's optimal choice of effort that is substituted in D's best reply (see equation 4.5) to obtain D's optimal effort.

$$x_p^{N*} = \begin{cases} \frac{s^N}{c_d^N} \text{ if } s^N \leq \frac{c_d^N}{2c_p^N} \\ \frac{c_d^N}{4s^N(c_p^N)^2} \text{ otherwise} \end{cases} \tag{4.7}$$

$$x_d^{N*} = \begin{cases} 0 \text{ if } s^N \leq \frac{c_d^N}{2c_p^N} \\ \frac{J(2s^N c_p^N - c_d^N)}{4s^{N2}(c_p^N)^2} \text{ otherwise} \end{cases} \tag{4.8}$$

2.2.2 The defendant raises an affirmative defense

In case of an affirmative defense, D has to bring evidence proving that the fact B has occurred, and P replies secondly. P's best reply is found by maximizing his expected

utility:

$$\max_{x_p^A} \frac{x_p^A}{x_p^A + s^A x_d^A} - c_p^A x_p^A \tag{4.9}$$

which gives: [13]

$$x_p^A(x_d^A) = \begin{cases} \sqrt{\frac{s^A x_d^A}{c_p^A}} - s^A x_d^A & \text{if } x_d^A < \frac{1}{c_p^A s^A} \\ 0 & \text{otherwise} \end{cases} \tag{4.10}$$

As previously, the second player is deterred from expending legal expenses if the first player chooses an effort superior to a certain threshold (here $\frac{1}{c_p^B s^B}$). This is more likely to happen when c_p^A and s^A take high values. D anticipates P's best reply and minimizes his expected loss accordingly.

$$\min_{x_d^A} \frac{x_p^A(x_d^A)}{x_p^A(x_d^A) + s^A x_d^A} + c_d^A x_d^A \tag{4.11}$$

with $x_p^A(x_d^A)$ satisfying equation (4.10). It gives D's optimal choice which is substituted in equation (4.10) to find P's optimal choice.

$$x_p^{A*} = \begin{cases} \frac{s^A(2c_d^A - s^A c_p^A)}{4(c_d^A)^2} & \text{if } s^A < \frac{2c_d^A}{c_p^A} \\ 0 & \text{otherwise} \end{cases} \tag{4.12}$$

$$x_d^{A*} = \begin{cases} \frac{s^A c_p^A}{(c_d^A)^2} \text{ if } s^A < \frac{2c_d^A}{c_p^A} \\ \frac{1}{c_p^A s^A} \text{ otherwise} \end{cases} \tag{4.13}$$

13. Graphically, P's best reply is similar to D's best reply in case of denying defense (see Figure 35).

2.3 The defendant's choice of defense

Let c_i denote the ratio of parties' marginal costs $\frac{c_d^i}{c_p^i}$ (with $i = N, A$). If D chooses to deny the fact A, his expected utility at the equilibrium is:

$$EU_d^N = \begin{cases} -1 & \text{if } s^N \leq \frac{c^N}{2} \\ -\left[\frac{c^N s^N}{c^N s^N + 2s^N - c^N} + \frac{c^N(2s^N - c^N)}{4(s^N)^2}\right] & \text{otherwise} \end{cases} \tag{4.14}$$

Conversely, raising an affirmative defense gives him the following expected utility:

$$EU_d^A = \begin{cases} -\frac{c^A}{s^A} & \text{if } s^A \geq 2c^A \\ -\frac{4c^A - s^A}{4c^A} & \text{otherwise} \end{cases} \tag{4.15}$$

D asserts the defense that gives him the highest expected utility. Therefore, he raises an affirmative defense if $EU_d^A > EU_d^N$.[14]

3 Analysis of the results

3.1 Benchmark assumptions

To begin with, two assumptions are made. First, the burdened litigant has to prove his claim by a preponderance of evidence ($s^N = s^A = 1$). This rule applies to P in case of negating defense but also to D if he raises an affirmative defense. As a result, there is no judicial bias favoring one of the litigants: The most credible party is the most likely to win the case. Second, the ratio of marginal costs is assumed to be equal to unity whatever D's

14. D is assumed to raise an affirmative defense if his expected utility is strictly greater than with a denying defense.

defense, which has two implications: First the two litigants face symmetric costs ($c^i = 1$, $\forall i = N, A$). Second, both defenses are equally plausible ($c^N = c^A$). With these assumptions, the following result is straightforward:

Proposition 4.1. If $s^N = s^A = 1$ and $c^N = c^A = 1$, then $EU_d^N = EU_d^A$

This can be interpreted as follows:

Result 4.1. If litigants face identical costs regardless of the defense chosen by D, and if the burdened litigant has to prove his claim by a preponderance of evidence, then D is indifferent between denying the facts or asserting an affirmative defense.

This intuitive result comes from the fact that the assumptions made tend to erase numerous sources of asymmetry, between defenses (since they are equally plausible) and also between litigants who are symmetrical both from the point of view of their marginal costs and as regard to the judicial decision-making process.

Yet, there remains in the model one source of asymmetry between litigants: One of them has to bring evidence first while the other plays lastly. Since the order of play is function of the defense chosen by D, one might expect D to prefer one of the two defenses, which is not the case. The reason is that the preponderance of evidence, associated with these costs assumptions, eliminates the possibility of corner solutions that can be found in the general case. [15] In other words, parties always exert a strictly positive effort at the equilibrium regardless of D's strategy. Formally, the standard of proof is sufficiently high compared to the ratio of marginal cost ($s^N > \frac{c^N}{2}$) so that D always replies with a strictly positive effort if he denies P's allegations. Conversely, with an affirmative defense, D plays

15. Without such restrictions on the value of c_i and s_i, D (resp. P) may refrain from investing at the equilibrium in case of negating (resp. affirmative) defense (see equations (4.12) and (4.13)).

at first but cannot discourage P from bringing evidence because the standard is sufficiently low ($s^A < 2c^A$).

Therefore, parties' order of play —and thus the burden of production— does not affect D's choice of a defense. However, this may not be the case if the burden of persuasion or/and the costs tend to favor one of the litigants. In what follows I relax one after the other each of the assumptions made above to study the effect of marginal costs and of the standard of proof on D's choice of defense.

3.2 The role of marginal costs

In this section, I still consider that the burdened litigant must fulfil the preponderance of evidence ($s^N = s^A = 1$) to focus on the ratios of marginal costs c^N and c^A and their effect on D's decision. In practice, it may obviously be the case that litigants face different costs and that defenses are unequally plausible. Comparing D's expected utilities (4.14) and (4.15) with $c_i \geq 0$ ($\forall i = N, A$) leads to the following proposition:

Proposition 4.2.

(i) If $c^N > 2$, then $EU_d^A > EU_d^N$.

(ii) If $c^N \leq 2$, $EU_d^A > EU_d^N$ if:

- $c^A < \frac{c^N(4-c^N)}{4}$ if $c^N \leq \frac{1}{2}$
- $c^A < \frac{1}{4-4c^N+(c^N)^2}$ if $c^N > \frac{1}{2}$

The first point to observe is that D always raises an affirmative defense when his marginal cost of producing evidence to deny P's allegations is more than twice that of P ($c^N > 2$). Indeed, if D is strongly disadvantaged in terms of cost, he absolutely must

avoid playing as a second player. Otherwise, his opponent, as a first mover, would easily dissuade him from spending resources and D would be certain to lose the trial. By contrast, D always engages legal expenses if he is the first to come with evidence after having claimed an affirmative defense. The amount of these expenses is lower than the level of damage (set at unity) he would have to pay in a negating defense, and he may even win the contest with a positive probability if the standard of proof applied to him is sufficiently low ($s^A < 2c^A$). Therefore D has strong incentives to raise an affirmative defense regardless of his marginal cost of producing new evidence compared to P's marginal cost of challenging his position.

Things are less straightforward when $c^N \leq 2$. Not surprisingly, the proposition (4.2) implies that a higher c^N encourages D to raise an affirmative defense [16] while a higher c^A gives him incentives to deny P's allegations. However, the result that D always chooses the affirmative defense when his marginal cost of denying is excessively high compared to that of P ($c^N > 2$) does not hold in the opposite case. If the new fact is very hard to prove (e.g. $c^A > 2$), D may still raise an affirmative defense provided that the cost of denying is high enough.

To take the analysis one step further, consider the Figure 36 that depicts D's choice of defense given by Proposition (4.2). The green curve represents the structure of marginal costs for which D is indifferent between the two defenses. On the area located on the left of the green curve, D asserts a negating defense, while he mounts an affirmative defense on the right. On the bisecting line, the two defenses are equally plausible ($c^N = c^A$). [17] Recall that the two questions of interest are the following: (i) Which defense is chosen by

16. This is the case because $\frac{c^N(4-c^N)}{4}$ and $\frac{1}{4-4c^N+(c^N)^2}$ are increasing in c^N respectively for $c^N \in [0, \frac{1}{2}]$ and $c^N \in]\frac{1}{2}, 2]$.

17. The two defenses are equally plausible if the ratio of marginal cost is identical regardless of the defense.

D if both defenses are equally plausible? (ii) In case one defense is more plausible than the other, does D always choose the most plausible defense?

(i) It has been shown in Section 3.1 that D is indifferent between the two defenses when $c^N = c^A = 1$. This is found graphically because the green curve passes through the point $(1, 1)$. If defenses are equally plausible ($c^N = c^A = c$) and parties' marginal costs differ ($c \neq 1$), Figure 36 reveals that D prefers the negative defense when $c < 1$ and asserts an affirmative defense if $c > 1$. Put differently, D is expected to deny P's allegations if he has the same cost advantage regardless of the defense and to assert an affirmative defense if he has the same cost-disadvantage with the two defenses.[18] Therefore, with asymmetric cost and equally plausible defenses, D is no more indifferent between the two defenses. This suggests that the result found with the benchmark assumptions (Result 4.1) relies on parties' identical costs rather than on equally plausible defenses.

(ii) Finally, consider the case where one defense is more plausible than the other ($c^N \neq c^A$). If D has a cost advantage for one of the defenses and a cost disadvantage for the other one, there is no ambiguity and D chooses the most plausible defense. Formally he asserts a negating defense if $c^A < 1$ and $c^N > 1$ and an affirmative defense if $c^N > 1$ and $c^A < 1$. Nonetheless, D may assert a defense that is less plausible than the other which is revealed graphically by the fact that the green curve does not coincide with the bisecting line (Figure 36). It may be the case when D has a cost advantage ($c^N < 1$ and $c^A < 1$) or a cost-disadvantage ($c^N > 1$ and $c^A > 1$) regardless of the defense he chooses. The results of this section are summarized as follows:

18. D's expected loss is increasing in the ratio of marginal cost whatever the chosen strategy.

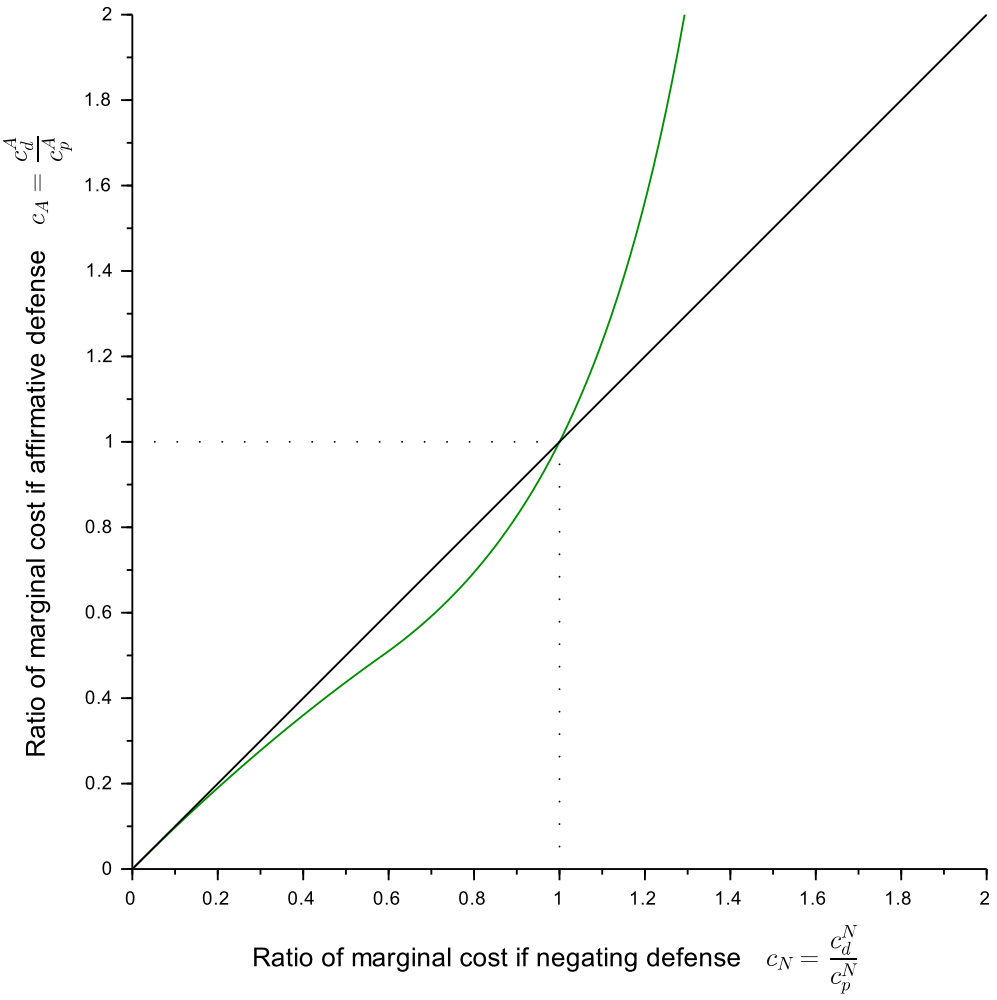


FIGURE 36 – The defendant's choice of defense with the preponderance of evidence

Result 4.2. With the preponderance of evidence as standard of proof:

(i) If D has a higher marginal cost than P for one defense while P has a lower marginal cost than D for the other defense, D asserts the defense for which he has a cost advantage, which is the most plausible defense.

(ii) If D has a cost advantage for both defenses, he may choose the negating defense while the affirmative defense is more plausible.

(iii) If D has a cost disadvantage for both defenses, he may choose the affirmative defense while the negating defense is more plausible.

3.3 The role of the standard of proof

Parties are now assumed to face identical marginal costs regardless of D's defense ($c^N = c^A = 1$) and the role of the standard of proof (s^i) is analyzed in greater detail. Recall that the standard of proof refers to the level of evidence required to persuade the court that one's claim is valid. Within the present framework, account must be taken on two standards: The first one (s^N) applies to P who has initially brought a claim and the second one (s^A) has to be met by D if he adopts an affirmative defense aiming at proving the existence of a new fact.

In Section 3.2, it has been assumed that $s^N = s^A = 1$ which corresponds to the preponderance of evidence. This standard requires the burdened litigant to be at least as convincing as the unburdened one. If it corresponds to the general case in common law countries, the standards are generally higher in the civil law tradition and other standards —like the clear and convincing evidence— may apply also in common law countries (see Section 4). Thus, I open the possibility of a more stringent standard for the burdened party (see equation (4.2)). It should be noted however that the case of more lenient standards than the preponderance of evidence is excluded from the analysis. Such standards would mean that a litigant could win the contest even if he is less credible than the opposing party, which is rarely the case in practice. The comparison of D's expected utility with this assumption gives an unambiguous result:

Proposition 4.3. If $c^N = c^A = 1$ and if $s^N > 1$ and/or $s^A < 1$, then $EU_N > EU_A$.

This can be interpreted as follows:

Result 4.3. If parties face identical marginal costs of producing evidence, and if the required standard of proof applying to the burdened litigant is at least as stringent as the preponderance of evidence, then D always denies P's allegations rather than asserting an affirmative defense.

In this framework, corner solutions are eliminated and litigants always engage some legal expenses to win the case. Indeed, two conditions must be fulfilled to allow for a corner solution. One of the litigant must be disadvantaged either because of his marginal cost, or because of the standard of proof. It is also necessary that the disadvantaged litigant does not bear the burden of production. Hence, the first player can easily dissuade the underdog litigant –playing at second– from investing. In the case at hand, the assumptions made on the standard of proof contribute to favor the unburdened litigant who plays at second. In these circumstances, it is all the more difficult for the first mover to prevent the second player from exerting any effort.

In this context, D has no special interest to play firstly rather than secondly. Furthermore, since marginal costs are symmetric, the only parameter influencing D's choice is the judicial bias induced by the standard of proof. D naturally turns toward the defense for which the judicial bias favoring him is the strongest or, likewise, the judicial bias favoring his adversary is the lowest. If D confines himself to contest P's claim, a more stringent standard for P ($s^A > 1$) makes it easier for D to win the case, and makes the negating defense option attractive. Conversely, elevating the burden of persuasion lying on D after D has raised an affirmative defense ($s^N < 1$) increases the risk of choosing such strategy and encourages D to deny P's allegations.

4 Application to patent litigation

4.1 The two types of defenses in patent litigation

A patent gives exclusive rights to an inventor to use and sell a particular technology during a limited time and in exchange for public disclosure. Patents are granted by public agencies like the United States Patent and Trademark Office (USPTO) or the European Patent Office (EPO) after they have examined whether the patentability requirements are met. [19] Once the patent has been issued, the patentee may exploit this technology by charging other firms wanting to use it or by charging supra competitive price. Holding a patent also allows the patentee to file a lawsuit if another firm violates his rights during the patent period. In practice, such judicial actions are at the root of most patent proceedings. In France, infringement actions represented 81 % of all patent cases heard by courts between 2000 and 2009 (Véron, 2010).

Once a claim has been brought, the defendant accused of infringement has the choice between two defenses. He may first deny infringement by arguing that his activity is behind the scope of the patent. Second, the defendant may admit that he uses or sells the invention patented by the claimant whilst challenging the patent's validity, on the basis that patentability requirements were not met at the time of the patent application. He may for instance allege that the invention was known before the patent application (novelty criterion), or that the technology was obvious for someone having ordinary skills in the art (non-obviousness criterion). Although there is no rule to prevent the defendant from mounting the two defenses at the same time, Ford (2013) shows that defendants "face pressures to focus on one or the other [defense]", mainly because claims have to be construed

19. Among the criteria, there are the novelty and the non-obviousness criteria.

consistently to be convincing, and also because of the cost induced by such strategies.

The model developed in Section 2 sheds light on the determinants of defendants' choices of defenses. This is useful to weight the potential selection effects occurring in patent litigation. Indeed, litigated cases are not randomly selected issues, partly because many disputes are resolved by an agreement before a claim is filed or during the pretrial phase (Priest and Klein, 1984). In patent litigation, the defendants' choices of defenses are also susceptible to generate a strong selection effect since the court rules on the validity of patents only if the defendant has mounted an affirmative defense. Such selection effects may explain why the percentage of patents that are invalidated in adjudicated infringement actions is very low in the USA: It lies between 2% and 3% of all infringement cases for the years 1995, 1997 and 2000 (Kesan and Ball, 2006) while it reaches 27% in France between 2000 and 2009 (Véron, 2010). This chapter aims at highlighting the circumstances under which such effect is likely to occur.

A better understanding of parties' behaviors also helps to design a judicial system that promotes innovation. To do so, trade-offs have to be made at the court level between the need to protect patentees' property rights and the need for removing bad patents. [20] To achieve these goals, infringed firms are allowed to sue alleged infringers, but courts are able, in infringement actions, to review the work of the institution that has granted the patent and to eliminate bad patents. [21] Such so-called bad patents are subjects of lively

20. These are patents that do not meet the patentability conditions.

21. It is the case in most countries but not in Germany where the so-called "bifurcated system" does not allow a court to decide on the validity of the patent in an infringement action (Cremers et al., 2013). In Japan, the Supreme Court allows the invalidity defense in an infringement case since the decision *Kilby* in 2000 (Oyama, 2012).

debates across the Atlantic where the increasing influx of patent applications as well as the limited resources of the USPTO have led many patent scholars to argue that too many patents are granted by the USPTO (Ford, 2013). This debate is not existing in France, but it should be noted that French patents are more often invalidated than European patents in French infringement actions (Véron, 2010) which may be a concern. [22]

The low patent invalidation rate in the USA and the possibility that numerous patents are wrongly granted by the USPTO give credit to the idea that defendants are reluctant to raise affirmative defenses compared to what would be socially optimal. This position is supported by Ford (2013) who argues that numerous asymmetries encourage defendants to confine in denying their opponents' position. This chapter investigates the conditions under which defendants systematically choose to argue non-infringement. Therefore, the model developed in Section 2 is applied to the context of patent litigation to analyze the cost of litigation and the rules of proof as potential determinants of defendants' incentives to raise an affirmative defense.

4.2 The role of the marginal costs

First, the defendant's strategy in an infringement case in likely to be influenced by the cost of producing evidence. More precisely, the results of the model (Section 2) suggest that the parameter of interest is the ratio of litigants' marginal costs for each of the defenses (denoted c^N and c^A). These ratios may reflect the relative merit of each defense. Following this interpretation, the litigant with the lowest marginal cost is said to be the favorite while his opponent is the underdog.

22. Between 2000 and 2009 in France, 31% of courts' decisions have invalidated the patent when the dispute was on a French patent, against 21% when the patent has been granted by the European Patent Office (Véron, 2010).

If a litigant is the favorite with one type of defense but the underdog otherwise, the framework of section 2 reveals that the defendant raises the defense for which he is the favorite. Thus, the defendant always prefer to deny the claimant's claim if he is the favorite by denying the claimant's claim but the underdog otherwise. More noteworthy is that the defendant may mount a negating defense despite the fact that his merit is stronger if he raises an affirmative defense. It may happen when the defendant is the favorite regardless of the defense he mounts and when the merit of the affirmative defense is not excessively high compared to his merit if he contests the charges brought against him.

Hence, with this interpretation of the marginal costs, it cannot be excluded that the defendant refrains from challenging the patent's validity while his merit would be higher by challenging it rather than by denying the claimant's allegations. However, the values of the marginal costs allowing for that result must be part of a limited subset (see Figure 36) to obtain this result. Thus, this explanation may not be sufficient to explain a generalized tendency to avoid challenging patents.

The defendants' tendency to argue non-infringement can be better understood by considering that the cost of gathering and submitting evidence is not only function of the merit of the case, but also of parties' access to information and evidence. According to Ford (2013), "accused infringers will almost always have better access to the information needed to litigate non-infringement, while patent holders will often have better access to the information needed to litigate invalidity." In the framework of this chapter, this can be interpreted as follows: The cost of producing evidence is lower for the defendant in case of negating defense ($c^A > 1$) but higher if he raises an affirmative defense ($c^N < 1$). With these assumptions, the model suggests that the defendant always relies on non-infringement. The-

refore, parties' access to the evidence may be part of the explanation for the defendants' strong incentives to argue non-infringement.

4.3 The role of the standard of proof

By choosing his defense, the defendant indirectly determines who will have to bring evidence and to convince the fact-finder and to what extent. As a result, one might expect him to account for the rules of evidence governing the discovery and the fact-finding process. If the defendant chooses to deny infringement, the claimant bears both burdens, the burden of production and the burden of persuasion, as it is usually the case in civil proceedings. The first of these burden requires the claimant to come first with some pieces of evidence, while the second means that he has to convince the court. This rule prevails in most countries, but the level of evidence required so that the claimant convinces the court —the standard of proof— strongly varies between legal traditions. In the common law tradition, the preponderance of evidence applies, requiring the claimant to be more credible than the defendant to win the case, while a more stringent standard is required in the civil law tradition.

In case of affirmative defense, most countries have created a presumption of patent validity implying a shift of the burden of proof to the defendant. For instance, the US Patent Act of 1952 states that "[a] patent shall be presumed invalid" (§282) and that "a party asserting that a patent claim is invalid has the burden of so proving". [23] Therefore, the defendant who raises such a defense has to present evidence supporting the fact that the patent has been wrongly granted, and has to convince the court. This is the case in

23. Note that the US Federal Rules of Evidence specify that the presumption only shifts the burden of production, and not that of persuasion, that is why the law provides explicitly that the burden of persuasion is shifted as well in this special case.

most countries even if the two burdens are not always (explicitly at least) separated by the law.

If most countries provide in their legislation a reversal of the burden of proof when the defendant asserts the patent invalidity, practices differ from one country to another concerning the required standard of proof applying to the defendant. In France, the intensity of this burden remains the same, whether the claimant has to prove infringement or the defendant has to prove the non-validity of the patent. In both case, a heightened standard is required to persuade the court. This stringent standard applying to patent challengers does not explicitly appear in the Civil Procedure Code but can be found in the jurisprudence. For example, a decision of the Paris Court of Appeal states that a patent can be challenged if the patent description does not provide sufficient detail, but this has to be proved beyond a reasonable doubt, [24] which corresponds to the highest possible evidentiary standard. [25].

In France, the burden of persuasion is high regardless of who bears it, but in some other countries, the standard of proof can be different depending on the defendant's defense. In this respect, the cases of Japan and the USA are interesting. As France, Japan is part of the civil law tradition and the law requires facts to be proved with a high standard for civil matters (Clermont, 2004). However, with regard to infringement suits, the Supreme Court has recently decided not to require such a high standard when defendants challenge the validity of a patent (Oyama, 2012). The burden of persuasion is therefore relatively heavy for the claimant asserting infringement, but much more lenient if the defendant claims that the patent is invalid.

The pattern is the opposite in the USA. As pointed out above, the claimant has to

24. Decision of the 13 January 2012.
25. This standard applies for criminal cases (in both traditions).

meet the preponderance of evidence standard to prove infringement. However, the burden is heavier for the defendant who can overcome the presumption of patent validity only by a clear and convincing evidence. This standard is less stringent than the beyond a reasonable doubt standard but is still much more demanding than the preponderance of evidence. This elevated burden is criticized by many American legal scholars (Bush et al., 2004), and a recent decision of the Supreme Court has contributed to this debate.

In 2007, the Canadian firm i4i has brought a lawsuit against Microsoft asserting that Word has infringed a patented method for editing documents. Microsoft has chosen an affirmative defense arguing that the patent was invalid because the prior art had not been examined by the USPTO at the time of the application. To support its position, Microsoft has asked the judge to apply a preponderance of evidence standard rather than a clear and convincing standard, which has been rejected by the trial judge at first instance and later by the appeal court. Microsoft subsequently filed a writ of certioriari with the United States Supreme Court but in 2011, the court ruled in favor of i4i and has, in this way, confirmed the elevated burden required to prove the non-validity of a patent. [26]

These different cases can be discussed using the model of Section 2 that accounts for the standard of proof in examining the defendant's incentives to raise an affirmative defense. The standard of proof determines the way the court weights evidence and decide the case. Therefore, it is modeled as a variable s introduced in the contest success function that generates an asymmetry between litigants. When this variable equals unity, parties are on an equal foot from the perspective of the judicial decision-making process: The most credible litigant is the most likely to win the case. Moreover, a higher value of s contributes

26. Microsoft Corp. v. i4i Limited Partnership, 131 S.Ct. 2238 (2011).

to increase the defendant's probability of winning the case while it favors the claimant if it goes down below unity. Because the standard of proof is rarely below the preponderance of evidence, I have assumed that $s^N \geq 1$ and $s^A \leq 1$. This is indeed what happens in the case of patent litigation in the three countries mentioned above. The description of the burden of persuasion in France, Japan and the USA is summarized in Table 16.

	Japan	**USA**	**France**
Standard of proof faced by P in case of negating defense ($\mathbf{s^N}$)	> 1	1	> 1
Standard of proof faced by D in case of affirmative defense ($\mathbf{s^A}$)	1	> 1	> 1

TABLE 16 – Standards of proof in patent litigation

It can be deduced from the model that the defendant chooses the negating defense in the three configurations above, under the assumption that parties face identical costs. Indeed, recall that the defendant is indifferent between the two defenses if the preponderance of evidence prevails regardless of the defendant's choice. In Japan, the high burden faced by the claimant for proving infringement encourages the defendant to deny the claimant's allegations. In the USA, it is rather the perspective of the elevated burden for challenging the patent's validity that drives the defendant to the denying defense. Finally, in countries where there is a heavy burden on the burdened litigant regardless of the defendant's defense, like France, all incentives push the defendant to assert a denying defense, since there is a pro-defendant bias with the negating defense and a pro-claimant bias otherwise.

5 Conclusion

In virtually almost civil cases, the defendant has the possibility to raise an affirmative defense rather than merely denying the claimant's claim. If so, the burden of proof is shifted on the defendant. This chapter aims at investigating defendants' incentives to raise an affirmative defense by accounting for rules of evidence governing the judicial process. The model first suggests that the defendant is indifferent between the two defenses under these assumptions: (i) The burdened litigant plays at first (burden of production) and has to be at least as credible as his adversary to win the case (preponderance of evidence), and (ii) parties face identical marginal costs.

From this, assumptions are relaxed, firstly to account for the possibility that parties face different marginal costs. If the defendant is cost-advantaged for one defense while he has a higher cost than the claimant for the other one, he chooses the defense for which he has the lowest relative cost. More interestingly, he may raise the least plausible defense if has a cost advantage or disadvantage with the two defenses. Thus, marginal costs appear as a determinant of the defendant's decision, but the defendant does not necessarily choose the defense for which he has the highest cost advantage.

The allocation of the burden of proof also plays a role in the defendant's choice of a defense: In most countries, the burden of proof is on the claimant in case of negating defense and on the defendant asserting an affirmative defense. However, practices differ among countries for what concerns the intensity of the burden of persuasion. The model intuitively suggests that increasing this burden encourages the defendant to deny the claimant's claim.

These results have then been applied to infringement suits, in which a claim is brought when a firm alleges another firm has violated one of its patents. The accused firm may either

argue that the patent is beyond its activity (denying defense) or challenge the validity of the patent (affirmative defense). Ford (2013) argues that there is a tendency for defendants to avoid challenging the patent's validity in the USA. I investigate the conditions under which such a tendency can be observed.

The model shows that the defendant may argue non-infringement even though his marginal cost of proving invalidity is lower than that of the claimant. However, another explanation may explain a generalized tendency to avoid challenging patents. If the defendant has a better access to evidence proving non-infringement, and if the patent holder is in a better position to prove that the patent is valid, then the defendant has very strong incentives to argue non-infringement. Furthermore, heavy burdens of persuasion tend to reinforce this tendency. Overall, the model suggests the existence of a strong selection effect: The limited access to evidence associated with the heavy burden of persuasion may deter defendants' from challenging the validity of patents.

Further extensions may be considered to address more comprehensively the defendants' incentives to raise an affirmative defense. First, the claimant's decision whether to bring a suit could be embedded into the model to learn about the potential selection effect that may occur at that phase of the game. Applied to patent litigation, this may shed some light on the role of the burden of proof as a potential explanation of the high patent litigation rate in the USA as compared to civil law countries, and on the widespread existence of patent trolls (non-practicing entities) in the USA while they remain absent in Europe.

Second, further analysis requires to account for negotiations. Incentives to settle may also generate potential selection effects (Priest and Klein, 1984), especially in the field of patent litigation. If the defendant threats to bring evidence of the patent invalidity, a patent

holder is very likely to negotiate: Indeed, an agreement is effective only between parties, while an adverse judgment would negatively affect its relations with other competitors. If parties are more likely to settle when the defendant challenges the patent, this may also explain why there are few invalidity rulings by the courts.

Third, the structure of information is susceptible to change depending on the defense chosen by the accused infringer. As claimed by Ford (2013), the defendant is in a better position to argue non-infringement because evidence are related to the nature of the products he sells. By contrast, the claimant is better informed if he has to defend the validity of the patent because he is supposed to know the conditions under which the patent has been granted. In this chapter, the access to evidence (or information) is reflected in the marginal cost of litigation. Yet, accounting more explicitly for asymmetrical information may shed a new light on that issue.

Conclusion

Nos travaux apportent une réflexion quant à l'effet des règles de preuve sur le comportement des parties lors d'un litige. Nous aboutissons à des résultats nuancés qui ne permettent pas de conclure à la supériorité d'une tradition par rapport à l'autre. Nos travaux mettent ainsi en évidence la complexité d'une analyse comparée de l'efficience des normes juridiques.

Le chapitre 1 part du constat que le standard de preuve est plus exigeant envers le demandeur en France (intime conviction) qu'aux Etats-Unis et en Grande-Bretagne (prépondérance de la preuve). Nous établissons dans ce chapitre un lien de causalité entre le standard de preuve et le volume du contentieux. Pour cela, notre analyse tient compte des incitations des victimes à initier une action en justice pour être indemnisées, mais également des incitations des parties à trouver un arrangement amiable. En effet, le volume du contentieux est d'autant plus faible que le nombre d'affaires réglées avant l'audience finale est élevé.

Nous avons développé un modèle en deux étapes. Dans un premier temps, une victime décide d'initier ou non une action en justice; le cas échéant, une des parties fait une offre "à prendre ou à laisser" à son adversaire. Durant tout ce processus, les parties sont inégalement informées sur les preuves qui seront présentées au juge. Cette information est déterminante puisque la partie non-informée n'est pas supposée répondre en produisant de nouvelles

preuves. Pour interpréter les résultats du modèle, nous considérons que la partie informée est celle qui supporte la charge de produire des preuves.

Le modèle aboutit à deux résulats principaux. Tout d'abord, un standard de preuve strict envers le demandeur diminue les incitations des victimes à aller en justice. Ce résultat est intuitif puisque l'espérance de gain du demandeur est d'autant plus faible que le standard est élevé. Si la charge de prouver les faits revient au défendeur, alors le standard élevé augmente les incitations à aller en justice, puisqu'il devient favorable au demandeur. En outre, nous montrons que le standard élevé constitue un obstacle aux négociations. Ce résultat s'applique également si la charge de la preuve pèse sur le défendeur.

Nous nous sommes ensuite appuyés sur quelques éléments empiriques afin de discuter ces conclusions. A l'aide de statistiques sur le nombre d'affaires civiles nouvelles par habitant, nous montrons que la propension à aller en justice est environ deux fois supérieure aux Etats-Unis qu'en France. De plus, la problématique du volume des litiges est appréhendée différemment par les pouvoirs publics et par les médias en France, aux Etats-Unis et en Grande-Bretagne. La question du coût des réclamations abusives est prégnante aux Etats-Unis et dans une moindre mesure en Grande-Bretagne, ce qui laisse à penser qu'il s'agit d'un problème assez récurrent dans les pays de *common law*. Elle est rarement abordée en France où les débats portent plutôt sur la nécessité de favoriser les Modes Alternatifs de Résolution des Litiges. Cela suggère que les parties sont plus réticentes à négocier en France, ce qui est corroboré par certaines statistiques que nous présentons pour étayer notre propos. En effet, environ 79 % (resp. 74 %) des affaires portées devant les Tribunaux de Grande Instance (resp. Tribunaux d'Instance) ont été jugés en 2014. Ce taux est beaucoup plus faible aux Etats-Unis et en Grande-Bretagne.

Le chapitre 2 s'intéresse également au lien entre le taux de négociation et les règles de

preuves. Cependant, alors que le chapitre 1 porte sur la manière dont les preuves sont évaluées, celui-ci étudie les règles d'administration des preuves, plus connues sous l'appellation *discovery* aux Etats-Unis. Il s'agit dans ce chapitre de comparer les règles américaines et françaises afin de déterminer si le taux de négociation très élevé aux Etats-Unis provient de la *discovery*, comme cela est fréquemment mis en avant. Pour cela, nous avons d'abord analysé les textes de loi (F*ederal Rules of Civil Procedure* et Code de Procédure Civile) afin de faire ressortir les différences majeures concernant le rôle du juge dans le processus de découverte des preuves aux Etats-Unis et en France. Nous avons ensuite modélisé l'impact de ces différences sur les incitations à négocier, en tenant compte de la possibilité de biais d'optimisme et d'asymétries informationnelles entre les parties, mis en évidence dans la littérature comme des causes possibles de l'échec des négociations.

Notre analyse des textes de loi montre que l'opposition entre un système accusatoire (Etats-Unis) et inquisitoire (France) n'est pas l'angle d'attaque le plus approprié pour comparer les règles de découverte des preuves des deux pays. Le juge américain joue un rôle différent de son homologue français. Il est susceptible de limiter le nombre de requêtes qu'une partie peut faire à son adversaire en fonction de leurs coûts. En France, les parties font des requêtes auprès du juge pour mener des expertises judiciaires. Elles sont acceptées si la solution au litige dépend suffisamment des faits que le requérant souhaite démontrer. Outre le fait que la sélection des requêtes s'opère différemment aux Etats-Unis et en France, il faut noter que l'étendue de la *discovery* est plus large que celle de la procédure française. Enfin, aux Etats-Unis comme en France, les parties sont dans l'obligation de communiquer les pièces qu'elles souhaitent utiliser à la partie adverse avant le procès.

Dans un premier temps, nous avons étudié les incitations des parties à négocier une fois que les preuves ont été découvertes. D'après notre analyse des textes de loi, il n'y a pas de

raison pour que les négociations aboutissent davantage aux Etats-Unis qu'en France à cette étape du litige. Dans les deux cas, les coûts de découverte des preuves sont irrécupérables. Si l'étendue plus large de la *discovery* conduit à réduire l'asymétrie d'information entre les parties de manière générale, elle ne favorise cependant pas les négociations : seuls les éléments dévoilés et communiqués à la partie adverse peuvent être utilisés au procès, en France comme aux Etats-Unis, ce qui élimine toute asymétrie informationelle relative à l'existence ou non d'éléments de preuves.

En outre, les incitations à négocier une fois que les pièces ont été produites pourraient être moindres aux Etats-Unis : les parties sont susceptibles d'avoir des anticipations contradictoires quant à l'issue du litige car des pièces peuvent entrer dans le champ d'application de la *discovery* même si elles ne sont pas admissibles comme preuve au moment du procès. Les parties doivent donc évaluer la valeur des pièces issues du processus de production de preuves. Or, les règles d'admissibilité sont soumises à l'interprétation du juge, et les parties ne jouent pas à armes égales puisque leur budget consacré au litige est susceptible de différer. En France, le rôle de filtre joué par le juge français conduit au contraire à réduire les incertitudes sur la valeur probante des éléments issus des expertises.

Dans un second temps, nous avons développé des modèles simples de résolution des litiges afin d'analyser l'effet des règles d'administration des preuves sur les négociations au début du processus de preuve, *i.e.* avant que les preuves n'aient été découvertes mais après la sélection éventuelle des requêtes des parties. Les résultats des modèles suggèrent qu'à cette étape du litige, la *discovery* incite les parties à négocier davantage que la procédure française. Si les parties sont rationnelles et parfaitement informées, la zone de négociation est plus grande aux Etats-Unis qu'en France. En effet, la portée plus large de la *discovery* tend à accroître le coût espéré de la recherche de preuves, ce qui incite les parties à négocier.

Si le demandeur est sujet à un biais d'optimisme, ou s'il n'est pas informé sur l'existence d'une pièce, les parties ont tendance à négocier davantage aux Etats-Unis. Le rôle de filtre joué par le juge français contribue dans ce cas à renforcer l'optimisme du demandeur une fois sa requête acceptée ou à le rendre plus exigeant au moment des négociations.

Le chapitre 3 étudie l'impact de la charge de la preuve sur les dépenses de recherche de preuves des parties. Nous supposons que les parties n'ont pas la possibilité de négocier pour focaliser notre analyse sur les interactions conflictuelles entre les deux protagonistes. Un modèle de recherche de rente à la Tullock (1980) est développé dans lequel chaque partie peut accroître sa probabilité de gagner le litige en engageant des dépenses visant à démontrer le bien-fondé de sa cause. L'issue du litige dépend des dépenses des parties ainsi que du standard de preuve.

Nous nous sommes efforcés de séparer les deux composantes de la charge de la preuve, la charge de persuasion et la charge de production. Alors que la première affecte la décision du juge du fond, la seconde organise le processus de découverte des preuves. Ce chapitre apporte une réflexion quant à la manière de formaliser ces deux règles de preuve, parfois considérées comme équivalentes dans la littérature théorique en économie du droit. La charge de persuasion (ou standard de preuve) est modélisée en introduisant un coefficient multiplicatif dans la fonction de succès et la charge de production détermine la séquence du jeu de sorte que la partie qui supporte la charge de production doit présenter des preuves en premier. Chacune de ces règles génère une asymétrie entre les parties dont nous analysons les effets sur les dépenses.

Le modèle permet de déterminer l'effet de la charge de persuasion et de production sur les dépenses privées des parties. La charge de persuasion pèse sur le demandeur de

manière plus ou moins forte selon le standard de preuve considéré. Les résultats du modèle sont analysés avec trois standards, 50% (prépondérance des preuves), 80 % (clear and convincing evidence) et 90% (intime conviction / beyond a reasonnable doubt). Les résultats suggèrent que la somme des dépenses légales est plus faible avec le standard de 90%, sauf si le défendeur a un coût marginal de production de preuves au moins trois fois plus élevé que celui du demandeur. Le standard intermédiaire conduit toujours à un niveau de dépenses plus élevé que les deux autres standards. Quant à la charge de production, elle n'affecte les dépenses des parties que si les coûts des parties sont asymétriques. Dans ce cas, il est préférable de placer la charge sur la partie dont le coût marginal est le plus élevé afin d'éviter une escalade des coûts.

Dans le chapitre 4, nous avons analysé la stratégie de défense du défendeur en fonction de la charge de la preuve et des coûts de production des preuves. Le défendeur peut nier la version du demandeur (défense dite négative) ou l'accepter tout en alléguant de nouveaux faits (défense affirmative). Sa stratégie de défense a un impact sur l'allocation de la charge de la preuve : les charges de produire des preuves et de convaincre le juge reposent sur le demandeur en cas de défense négative mais elles sont renversées sur le défendeur s'il soulève une défense affirmative. Nous avons formalisé cette situation à l'aide d'un modèle de recherche de rente à la Tullock (1980) dans lequel la charge de la preuve est modélisée comme dans le chapitre 3, avant d'appliquer notre modèle au cas des actions en contrefaçon.

Nos résultats suggèrent que le défendeur est indifférent entre les deux stratégies lorsque le principe de prépondérance des preuves s'applique et que les parties supportent un coût marginal identique. Nous avons ensuite assoupli chacune de ces hypothèses pour mettre en lumière l'impact de ces variables sur le choix du défendeur. Si le choix d'une défense présente

un avantage en termes de coûts pour le défendeur alors que l'autre le désavantage, il choisit logiquement la défense qui l'avantage. En revanche, si les deux stratégies présentent un avantage (ou un désavantage), il peut paradoxalement choisir la stratégie pour laquelle son coût marginal relatif n'est pas le plus faible. Par ailleurs, la charge de persuasion affecte la décision du défendeur de manière intuitive : celui-ci est d'autant plus incité à choisir une défense affirmative que le demandeur supporte initialement une charge de persuasion faible.

Nous avons finalement appliqué notre analyse au cas des actions en contrefaçon. Une telle action est initiée par une entreprise (demandeur) qui reproche à un concurrent (défendeur) d'avoir enfreint un de ses brevets. Le défendeur peut remettre en cause la contrefaçon (défense négative) ou contester la validité du brevet (défense affirmative). Il y a des débats aux Etats-Unis sur la validité réelle des brevets accordés par l'organisme américain chargé de les émettre (USPTO), et certains auteurs pointent du doigt les réticences des défendeurs à remettre en cause la validité des brevets dans les actions en contrefaçon.

Notre analyse suggère qu'une entreprise peut être incitée à plaider la non-contrefaçon même si son coût marginal relatif de production de preuves est plus élevé que si elle remet en cause le brevet. Cette réticence peut être renforcée par la difficulté de prouver qu'un brevet est invalide. En outre, nous avons montré que les règles de preuve jouent un rôle crucial. Par exemple, aux Etats-Unis, le défendeur qui conteste la contrefaçon doit être plus crédible que le demandeur (standard de 50%) alors qu'il fait face à un standard de 80% s'il remet en cause le brevet. D'après les résultats du modèle, cette asymétrie de traitement des preuves entre les deux défenses conduit le défendeur à contester la contrefaçon, sous l'hypothèse de coûts marginaux identiques. De manière assez intéressante, notre analyse des règles de preuve françaises et japonaises aboutit au même résultat bien qu'elles se dif-

férencient fortement des normes américaines.

Ces travaux suscitent quelques pistes de réflexion sur l'analyse des systèmes judiciaires, et en particulier des règles de preuve. Ces règles sont au cœur des systèmes judiciaires car elles gouvernent les rapports entre les magistrats et les parties. Dans la littérature, le juge est essentiellement appréhendé comme celui qui tranche le litige alors qu'il joue un rôle notable dans la découverte des preuves, dans la tradition civiliste comme dans la tradition anglo-saxonne. Une modélisation plus fine et plus élargie de la manière dont le juge se saisit des règles de preuve et des limites des pouvoirs des parties pourra enrichir l'analyse des conséquences de ces règles sur les comportements des justiciables. Une telle réflexion nous semble participer à l'établissement d'un dialogue durable entre la communauté économique et juridique en France.

L'analyse du système judiciaire nécessite également d'approfondir la compréhension du comportement des justiciables. Les travaux présentés ici portent soit sur les comportements de recherche de preuve des parties, soit sur les incitations à négocier. En pratique, cependant, les parties tentent de négocier en même temps qu'elles maximisent leurs chances de gagner le procès. Elles poursuivent ainsi deux objectifs en parallèle, ce qui peut les amener à prendre des décisions qui échappent au modélisateur étudiant séparément ces problématiques. L'analyse du comportement des justiciables lors des litiges pourrait donc gagner en finesse en tenant compte à la fois des interactions d'échange et de conflit entre les parties.

Par ailleurs, l'étude des conséquences des règles de preuve sur les comportements des parties et du juge contribue aux débats sur l'efficience des normes issues de différentes traditions juridiques. Elle vient en complément des travaux comparant les systèmes juridiques du point de vue de l'origine du droit car elle permet de mieux appréhender le processus de

normalisation jurisprudentielle dans les pays étudiés. Cette approche nécessite une analyse approfondie des normes juridiques afin de construire des hypothèses plus proches de la réalité et ainsi d'apprécier avec plus de finesse les réactions des justiciables. Elle permet ainsi de développer des arguments afin de donner du sens ou, au contraire, de remettre en cause l'hypothèse de supériorité de la *common law* en se focalisant sur des règles précises.

Finalement, une analyse plus complète tiendrait compte des conséquences des règles de preuve sur d'autres aspects du bien-être social. En particulier, nous souhaitons attirer l'attention sur des critères de *welfare* peu étudiés en économie du droit. Nos analyses ont fait apparaître que le respect de certains droits, comme le droit à la vie privée ou le secret des affaires, joue un rôle notable lors du processus de découverte des preuves. Ces considérations ont un poids plus important en France qu'aux Etats-Unis dans l'établissement des preuves et la mise en œuvre d'expertises (cf. chapitre 2). Cette différence est susceptible d'avoir des répercussions considérables sur les comportements des justiciables lors du processus de production de preuves, ainsi que sur les incitations à initier une action judiciaire et à négocier.

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Résumé :

Les normes procédurales sont susceptibles d'affecter les stratégies mises en place par les parties à un litige. Nous étudions leur impact sur le volume des contentieux et sur le montant des dépenses engagées par les parties afin de gagner le procès. Ces deux composantes du coût social des litiges sont au cœur des défis que les pays développés doivent relever pour garantir l'effectivité des règles de droit substantiel. Nos travaux portent en particulier sur les règles de preuve, et nous mettons l'accent sur l'opposition entre les règles civilistes et celles de *common law*.

Après avoir défini les contours et les enjeux de notre sujet dans l'introduction générale, nous développons un plan en deux parties. La première partie porte sur le comportement des parties lorsque celles-ci ont la possibilité de parvenir à un accord. Des modèles stratégiques et optimistes sont développés pour appréhender les décisions d'aller en justice et de négocier. La seconde partie est centrée sur le processus de production de preuves qui précède l'audience finale. Nous utilisons des modèles de recherche de rente pour analyser les incitations des parties à engager des dépenses.

Les résultats suggèrent que les règles de preuve ont un impact considérable sur le coût social des contentieux. Nous montrons que le volume des litiges en France et aux États-Unis peut s'expliquer par les différentes règles de preuve s'appliquant dans ces deux pays. Notre analyse révèle également que les règles de preuves constituent un déterminant majeur du coût privé des litiges et des stratégies de défense des défendeurs.

Descripteurs : Système judiciaire, standard de preuve, charge de la preuve, règles de découverte de preuves, négociations pré-jugement, défense affirmative, recherche de rente.

Title and Abstract:

A microeconomic analysis of rules of proof in civil litigation.

Procedural rules are likely to affect the strategies of the parties in a dispute. We study their impact on the volume of litigation and on the amount of legal expenses incurred by parties to win the trial. These two components of the social cost of litigation are at the heart of the challenges that must be addressed by developed countries to guarantee the effective enforcement of the substantive law. Our works relate more specifically to rules of proof, and the emphasis is given on the opposition between civilian and common law rules.

After defining the scope and the stakes of the thesis in the general introduction, we develop a plan in two parts. Part I studies parties' behavior when they have the possibility to negotiate to avoid a trial. Strategic and divergent expectations models are developed to apprehend parties' decisions to sue and to settle. The second Part is oriented toward the evidence production process preceding the final hearing. We use rent-seeking models to analyze parties' incentives to engage legal expenditures.

The results suggest that rules of proof have a substantial effect on the social cost of litigation. We show that the volume of litigation in the US and in France can be explained by the various rules of proof prevailing in these two countries. Moreover, our analysis reveals that the rules of proof constitute a major determinant of the private cost of litigation and of defendant's defense strategies.

Keywords: Judicial system, standard of proof, burden of proof, discovery, pre-trial negotiations, affirmative defense, rent-seeking.