

The Effect of Fee Shifting on Litigation: Evidence from a Court Reform in the UK*

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ABSTRACT

We study a U.K. court reform that established a cap on the amount of costs that a successful litigant may recover in a case litigated in the Patents County Court (PCC). We first build a model to study the mechanisms that determine the impact of a costs cap on the number of cases filed and the settlement rate. We then perform an empirical analysis taking advantage of the existence of another court that was not affected by the reform. We find that the costs cap increased the number of cases filed and decreased the settlement rate.

Keywords: Litigation, fee shifting, court reform, intellectual property, U.K.

JEL Classification: K10, K30, K41

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1 Introduction

We contribute to the theoretical and empirical literature on the effect of litigation cost shifting regimes by studying a court reform recently implemented in the U.K. (in the jurisdiction of England and Wales). Among the possible ways to allocate the cost of adjudication between the two sides in a lawsuit, the so-called American Rule and English Rule generally serve as the foundation for economic analysis. Under the American Rule, it is assumed that each party will bear its own costs, which reflects the typical (though by no means exclusive) practice in U.S. courts. Under the English Rule, it is assumed that the party on the losing end of a lawsuit will pay its own costs as well as all costs incurred by the winning party, which is also referred to as fee-shifting. This assumption again reflects the approximate, but by no means exact, practice applicable in British courts.¹

The existing theoretical literature on the distinction between the American and English Rules suggests that the practice of shifting costs to the losing party has four primary effects.² First, existing models predict that fewer suits will settle in a legal environment where the English Rule applies. Assuming that the parties have asymmetric information about the likely outcome of a case, the English Rule will tend to exaggerate their disagreement about the expected value of their respective recovery or payout by adding litigation costs to the total amount at stake in the case. Second, with similar reasoning, the literature predicts that the English Rule will tend to increase the overall rate of litigation. For the same reason that fewer cases will settle once filed, fewer disputes will settle before a lawsuit is filed. Third, the literature shows that the English Rule will likely affect the types of cases that are brought. When the parties share relatively symmetric information, the English Rule will tend to deter the filing of weak, i.e., low-probability-of-winning, cases by reducing the plaintiff's total expected recovery and, conversely, under the same circumstances, the English Rule will tend to encourage the filing of strong, i.e., high-probability-of-winning, cases by increasing the plaintiff's expected total award.³ In effect, the risk of paying the defendant's costs acts as potential penalty for bringing weak claims, while the prospect of having one's own costs covered by the defendant serves as a reward for bringing strong claims. Finally, the literature predicts that the English Rule will lead parties to litigate their cases more intensely. Because the prospect of fee shifting raises the stakes of litigation, it likewise raises the marginal benefit of additional spending. At the same time, the potential for a cost-recovery award decreases the marginal cost of devoting additional resources to litigation by introducing some likelihood that one's opponent will wind up covering that additional cost.

Despite general consensus in the theoretical literature that the English Rule should have these four effects, relatively little empirical evidence has been collected in an effort to confirm (or refute) their existence in real-world litigation.⁴ The relative lack of empirical evi-

¹Neither the U.K. nor the U.S. legal systems actually enforce rules as rigid as those economic analyses typically analyzes. In the U.K. a successful party is likely to recover a good deal less than its actual costs total. For example, prevailing parties in patent cases generally recover about half to two-thirds of their actual costs (Forsyth and Watts, 2011). In the U.S. various common law rules and statutory provisions permit fee awards in certain circumstances, especially when a litigant has acted in bad faith (see, for example, Cohen, 2008).

²For an overview, see Spier (2007).

³As Polinsky and Rubinfeld (1998) show, the English Rule can also have the opposite effect when the parties have asymmetric information.

⁴For an overview of the relevant empirical literature, see Kritzer (2002).

dence can be explained by the difficulty inherent in making comparisons of litigation behavior across jurisdictions, as well as by a general lack of (quasi-)experimental data in the area of litigation that would allow such analysis. As a consequence, much of the available empirical evidence focuses on litigation in two idiosyncratic U.S. states: Alaska, the only state that routinely awards attorney's fees to prevailing parties, (Di Pietro, et al., 1995; Rennie, 2012) and Florida, which applied the English rule in medical malpractice cases between 1980 and 1985 (Snyder and Hughes, 1990; Hughes and Snyder, 1995; Helland and Yoon, 2016). Most other studies examine the impact of similar, but distinct, cost-recovery rules, including one-way fee shifting provisions applicable to certain causes of action in the U.S. (Schwab and Eisenberg, 1988), offer-of-judgment statutes applicable in various U.S. jurisdictions (Yoon and Baker, 2006), and the effect of various fee shifting regimes aggregated across causes of action and jurisdictions (Williams, 2001; Fournier and Zuehlke, 1989). Finally, scholars have gathered experimental results (Anderson and Rowe, 1995; Rowe and Anderson, 1996; Inglis et al., 2005; Massenot et al., 2017) and survey data (Kritzer, 1984; Pfenningstorf 1984; Genn, 1987; Shapard, 1995) on the impact of the various fee shifting regimes.

The empirical literature on cost-recovery rules, in addition to being thin relative to its theoretical counterpart, has also produced inconsistent findings. While studies of Florida have found significant effects, those of Alaska have not. The results of experimental simulations are similarly at odds. Moreover, even among studies that produced significant results, only some have found effects consistent with the existing theoretical literature. This lack of consistency further underscores the need for additional analysis.

In this paper, we study a series of court [reforms](#) implemented in the U.K. between 2010 and 2013.⁵ Chief among these reforms for purposes of our analysis is the introduction of a £50,000 cap on the amount of costs recoverable in intellectual property (IP) suits filed in the Patents County Court (PCC, recently reconstituted as the IP Enterprise Court or IPEC), one of only two venues for litigating IP disputes in England and Wales. Post-reform, winning parties can recover at most £50,000 in costs from their opponents (and in practice generally much less). Any additional costs they incurred during litigation they must bear on their own. In effect, then, the introduction of a cap on the recovery of litigation costs establishes a new intermediate cost-recovery regime that shares characteristics of both the English and American Rules. This means that the costs cap limits the extent to which fee-shifting is permitted.

To study the costs cap's effect on litigation behavior, we first build a theoretical model in which heterogeneous potential plaintiffs need to decide whether to file a case against a defendant. If the case is filed, the plaintiff makes a settlement offer to the defendant which can be accepted or turned down. In the latter scenario, a judgment is handed down by the court. Our model extends the seminal litigation model by Bebchuk (1984) in three respects. First, while Bebchuk deals with the case of a single plaintiff (or, equivalently, homogeneous plaintiffs), we consider a set of heterogeneous potential plaintiffs who need to decide whether to file a case in court, and assume that it is costly to do so. This feature of our model is crucial for the investigation of the effect that the costs cap (and, more generally, any change in the cost-recovery rule) has on the number of cases filed. Second, our model focuses on post-filing settlements, which we are able to observe, while Bebchuk

⁵The U.K. comprises separate legal systems: England & Wales, Scotland, and Northern Ireland. Our data focus on England & Wales where the overwhelming majority of cases occur.

(1984) deals with pre-trial settlements, which are typically much harder to observe because they include settlements reached without any claim being filed. Therefore, unlike Bebchuk (1984) and other models of pre-trial settlement, our model can be mapped onto observable empirical patterns of settlement. Third, we consider a general class of cost-recovery rules allowing us to study the effect of any one-sided or two-sided fee-shifting rule and, in particular, a costs cap like the one that has been implemented at the IPEC.

Our theoretical analysis concludes that the effects of a shift away from a pure English Rule to the hybrid regime resulting from the costs cap are in fact ambiguous. More precisely, we show that a decrease in plaintiffs' (defendants') recoverable costs has a negative (positive) effect on plaintiffs' incentives to file cases. This implies that the costs cap has two opposite effects on the number of case filings. We also establish that the effect of a change in the parties' recoverable costs on the settlement rate consists of a direct effect (i.e., the effect for a *given* set of plaintiffs) and an indirect effect resulting from the effect of that change on the set of plaintiffs. While the direct effect is similar to the effect identified in Bebchuk (1984), the indirect effect has been overlooked in the existing literature on settlement. We show that both the direct and indirect effects of a decrease in defendants' recoverable costs on the settlement rate are positive. However, a decrease in plaintiffs' recoverable costs has a positive direct effect, but a negative indirect effect, on the settlement rate. This makes the overall effect of any change in the fee shifting regime that affects plaintiffs' recoverable costs ambiguous in general.

Second, we collect empirical evidence of litigants' reactions to the IPEC's costs cap to study the impact fee-shifting has on litigation behavior in actual suits. In carrying out this analysis, we take advantage of our ability to compare IP litigation in the IPEC with IP litigation in the High Court of England and Wales, which was not directly affected by the reform and thus acts as a control group that allows us to isolate the causal effect of the costs cap from other unobservable time-varying factors. Our empirical analysis – based on data from over 2,000 suits (covering the period 2007-2013) hand collected from physical court records at the IPEC and the High Court – shows that the shift from the English towards the American Rule led to an increase in the number of cases filed by companies and a decrease in the rate of settlement. Our theoretical analysis allows us to interpret the increase in case filings as evidence that the positive effect of the reduction in the defendants' recoverable costs outweighs the negative effect of the reduction in plaintiffs' recoverable costs. The fact that we find empirically a negative effect of the costs cap on settlements means that the indirect effect on the settlement rate uncovered in our model outweighs the direct effect that has been emphasized in the existing literature.

Our analysis contributes directly to the literature on the design of litigation systems, in particular the question of how to allocate litigation costs. In the last two decades, the cost of litigation has played a prominent role in legal policy discussions, including those concerning access to justice and tort or other civil justice reforms. There are a few existing policies in the U.S. that cap legal fees similar to the IPEC, such as a cap on fees that legal representatives can claim after successfully litigating claims for social security disability benefits (Hoynes et al., 2016). But there are no studies of the effect of such caps on litigation behavior. In the context of intellectual property litigation, the topic of litigation costs has played a particularly prominent role in recent policy debates. In the U.S. policymakers are actively debating legislative reforms that if enacted would make fee awards routine

in patent suits.⁶ In addition, calls for the establishment of a ‘small claims’ court for IP disputes – one that would resemble the IPEC in many regards – have drawn the attention of U.S. policymakers twice since 2013.⁷ Meanwhile, in Europe, policymakers stand on the precipice of establishing a Unified Patent Court (UPC), the primary function of which will be to significantly reduce the cost of enforcing patent rights continent-wide (McDonagh, 2016). In addition, the UPC will alter the way fee shifting rules apply in many patent cases by introducing costs caps that vary with the value of the case and, at the low end, establish ceilings on recovery even lower than the one applicable in the IPEC.⁸

The remainder of this paper is organized as follows. We first describe briefly the IP litigation system in the U.K. and the IPEC reforms. Section 3 describes the theoretical model and its implications for the empirical analysis. Section 4 describes the data used in our empirical analysis and Section 5 presents our analysis and results. Section 6 offers a few concluding remarks.

2 Legal background and reforms

There are two courts which operate within the the Chancery Division of the High Court of Justice of England and Wales of relevance to our analysis: (i) the Patents County Court (PCC) – since 2013 reconstituted as the Intellectual Property Enterprise Court (IPEC) – and (ii) the Chancery Division of the High Court, either in the general High Court (HC), which hears cases concerning copyright, trade marks (U.K./Community) and passing off, and un-registered designs (U.K./Community), or at the specialist Patents Court (PHC), which hears cases that involve patents, and registered designs (U.K./Community).⁹

2.1 IPEC reforms

The PCC underwent comprehensive procedural reforms between 2010 and 2013.¹⁰ The reforms consisted of several stages, and were staggered over a span of four years. The most important change for the purposes of our analysis was the introduction in October 2010 of a recoverable costs cap of £50,000 for trials on substantive liability (with an additional

⁶For a summary of patent reform legislation proposed in the last two sessions of the U.S. Congress, see Patent Progress (2016). In addition, in a pair of cases decided in 2014, the Supreme Court of the United States modified the test that U.S. courts apply when deciding whether to award attorney’s fees in patent suits in a way that many anticipate will make fee awards more common. *Octane Fitness, LLC v. Icon Health & Fitness, Inc.*, 134 S. Ct. 1749 (2014); *Highmark Inc. v. Allcare Health Management System, Inc.*, 134 S. Ct. 1744 (2014).

⁷In 2013, the Judiciary Committee of the U.S. House of Representatives commissioned a report on the topic of creating a small claims court for copyright disputes prepared by the U.S. Copyright Office, which endorsed the idea. In 2015, patent reform legislation that passed the House again called for further study on the topic.

⁸If established, the UPC will make it possible for patent rights to be enforced across 25 European member countries with a single suit. Under current law, enforcement must take place separately in each country. In addition, the UPC’s proposed rules for cost shifting awards include caps on the amounts recoverable (Preparatory Committee for the Unified Patent Court, 2016). Current rules propose a €38,000 cap for cases valued at or below €250,000 and a €56,000 cap for cases valued up to €500,000.

⁹For a more detailed description of the U.K. IP litigation system see Cremers et al. (2016).

¹⁰For more details see Fox (2014) and Helmers et al. (2015).

cap of £25,000 relating to subsequent hearings concerning damages).¹¹ Alongside the costs cap, a number of other procedural changes took effect as well, including the introduction of active case management and a limit on the time to be taken at trial. In June 2011, a £500,000 damages cap was introduced for cases enforcing patents and designs, and this rule was subsequently extended to all IP cases four months later. Further, between October 2012 and April 2013, the court introduced a Small Claims Track (SCT), which is available for cases enforcing copyrights, trade marks, and rights to databases or unregistered designs – but not cases concerning patents or registered designs. SCT claims are limited to a value of £5,000 and costs recovery is set at a level of £260. In April 2013, the SCT Claims limit was raised to a value of £10,000. Finally, in October 2013 the PCC was reconstituted from a county court into a specialist court – the IPEC – within the Chancery Division of the High Court of England and Wales. One effect of this is that all the remedies available in the PHC/HC are available in the IPEC multi-track including preliminary and final injunctions, damages, accounts of profits, delivery up, disclosure, search and seizure and asset freezing. In other words, there are no differences in the remedies each court can award although the damages cap restricts the level of damages available at the IPEC. However, the remedies available in the IPEC SCT are more limited - it has the power to order final injunctions, and final damage awards, but it does not have the power to issue preliminary injunctions, search and seizure orders or asset freezing orders.

Our focus is on the introduction of the costs cap in October 2010, which is widely perceived by practitioners to have been the most impactful element of the PCC/IPEC reforms described above. As noted by one attorney: “Key [to the reforms] was the costs cap of £50,000, so parties knew the maximum that could be awarded against them from the other side’s costs.” (Managing IP, April 2013: 56). By comparison, as explained below, the damages cap and the introduction of the SCT have had little effect on litigation at the IPEC multi-track.

Although the damages cap could, in theory, have affected litigation behavior, it has not done so in practice for two cogent reasons: (i) the damages cap was set so high that in practice it is generally not binding – in fact the average claim value provided by plaintiffs when filing their case is only around £75,000 (excluding the SCT); and (ii) damages are not the primary remedy sought in IP cases at either court – the injunction is. Helmers et al. (2015) show that the damages cap has had indeed no effect on litigation behavior at the IPEC multi-track. We also confirmed this through extensive qualitative interviews conducted with 17 legal practitioners (judges, solicitors, barristers, patent attorneys, trade mark attorneys) and 18 companies that litigated at either the PHC or IPEC (Helmers et al., 2015). Interviewees viewed the damages cap as ineffective for the reasons outlined above – (i) because it was set at a non-binding level and (ii) it is not the primary remedy sought. In fact, 82% of the legal interviewees stated that the cap is either ‘irrelevant’ or ‘of little significance,’ largely because the central remedy sought at the IPEC is an injunction (to protect an exclusive/monopoly right). The qualitative data gathered from business users of the courts also indicates that the damages cap is of little importance. By contrast, all interviewees regarded the costs cap as by far the most influential component of the reform.¹²

¹¹Separate hearings on damages occur in the courts of England and Wales after the conclusion of the trial on substantive matters.

¹²For detailed discussion see Helmers et al. (2015).

The introduction of the SCT in late 2012 is also very unlikely to have affected litigation in the IPEC multi-track and hence to have potentially confounded the effect of the costs cap. Our data indicate that the SCT has only attracted cases that would not have been litigated in the main track due to the low claim value. In fact, the vast majority are copyright cases (mostly related to photos) brought by individual plaintiffs where the average claim value is only £3,300.¹³ His Honour Judge Hacon, the current IPEC judge, stated explicitly “I doubt very much that Small Claims has made a difference to Multi-Track. I say that because the number of cases filed in Small Claims has risen considerably since I started and yet in that period there has no sense of a stream of small cases which used to come to Multi-Track drying up. I think the cases filed in Small Claims are overwhelmingly cases that would not have been filed at all [...].”

We provide more details on the legal background and reforms in appendices A and B.

2.2 IP courts

In our analysis, we analyze the effect of the costs cap on litigation at the IPEC and rely on litigation at the PHC/HC as a control group. For this approach to be valid, litigation at the PHC/HC must have been unaffected by the IPEC reforms. However, litigation at the PHC/HC could have been affected by the reforms (i) directly or through (ii) forum shopping, i.e. parties’ choice whether to initiate proceedings at the IPEC or the PHC/HC. We address these two concerns quantitatively in Section 5 below. Here, we discuss the relationship between the two courts that affects (i) and (ii) with reference to the legal framework as well as our qualitative interview data with judges and lawyers who have experience of both venues.

Regarding (i), in principle, IP cases can be heard and determined by either the IPEC or PHC/HC (Fox, 2014: 15-16). In practice, however, there has been a clear separation between the different venues regarding the types of cases they hear; crucially, this has remained unaffected by the reforms. Indeed, the qualitative data that we collected from the judges and lawyers involved in IP litigation at both the PHC/HC and IPEC demonstrate that the PHC/HC was largely unaffected by the IPEC reforms (Helmets et al., 2015). Mr. Justice Birss, now a judge of the High Court, but who was the IPEC judge during the crucial reform period 2010-2013, expressly stated that from his experience “the number and type of IP cases coming to the HC/PHC has not been affected by the IPEC.”

With respect to (ii), forum shopping could be a concern because parties cannot contract out of the IPEC fee regime while staying within the IPEC. If a party wants to have unlimited costs then filing at the PHC/HC is the only option. Conversely, if a party seeks a cap on costs, the IPEC is the only option. While plaintiffs generally choose the venue they deem appropriate, defendants can affect venue choice by applying for a transfer to another venue. That is, a case that is initiated at the IPEC may be transferred to the PHC/HC and vice versa. That said, both courts have the power to transfer cases to the other venue without consent from either litigating party while imposing the costs of the transfer on the litigating parties (Fox, 2014: 173-174).¹⁴ The case law on transfers shows that the relevant factors to be considered by judges include the size and financial resources of either of the litigating

¹³For more discussion on the SCT see Helmets et al. (2015).

¹⁴Note that IP claims (except for patents and registered designs) can also be filed with a select number of county courts. These courts usually transfer these cases to the PCC (IPEC) – see Figure A-3.

parties, factual and legal complexity, the expected length of trial, the value of the claim and of any non-pecuniary relief sought, as well as whether a case raises important issues of law that are in the public interest.¹⁵ The case law also shows that judges take into account any potential abuse of the IPEC or PHC/HC procedures by either party.¹⁶ Hence, the combination of a clear separation between the IPEC and PHC/HC and transfers ordered by the court if the venue chosen by the parties is deemed inappropriate act as strong safeguards against forum shopping. In fact, our data demonstrate that there have been few transfers between the PCC (IPEC) and PHC/HC (see Figure 4 in Section 5.3 below), something that indicates a very low risk of forum-shopping. This was also confirmed by our qualitative interviews. Mr Justice Birss stated that “transfers in either direction are fairly uncommon” and forum shopping did not occur as a result of the reforms – the reason being that “the basic principles relating to transfer were clarified in PCC/IPEC cases fairly soon after the reforms were implemented,” a point also made by Fox (2014: 47-48). Mr Justice Birss in fact warned against over-interpreting “a tiny number of transfer cases.” His Honour Judge Hacon, the current IPEC judge, also noted that case transfers between the two venues are very few and far between. These views were also expressed by other legal practitioners surveyed in Helmers et al. (2015). They did not consider forum shopping to be a significant issue before or after the reforms; neither did they think that the reforms have led to forum shopping.

3 Model

This section describes a model that analyzes the effects of the costs cap, and more generally any change in recoverable costs, on (i) the number of cases filed by potential plaintiffs, and (ii) the settlement rate of cases after filing.

3.1 Setup

Consider a unit mass of potential plaintiffs (e.g., IP holders) and assume that each potential plaintiff is involved in a dispute with a single potential defendant (e.g., and alleged infringer). We suppose that each potential defendant has private information about his probability p of losing in court, which can be interpreted as her *type*. The potential plaintiff does not know the defendant’s type but only that it is distributed over an interval $[p, \bar{p}]$ with a differentiable cumulative distribution function $F(\cdot)$. We denote $f(\cdot)$ the corresponding density function, which we assume to be differentiable, and make the standard assumption that the hazard rate $\frac{f}{1-F}$ is increasing.

Let $D \in (\underline{D}, \bar{D}]$ be the value of the damages that are awarded by the court to a potential plaintiff who files a case and prevails at trial. D can be interpreted as the type of the potential plaintiff and is assumed to be common knowledge. We denote $G(\cdot)$ the cumulative

¹⁵See Fox (2014:48-57) for a detailed review of the different factors and the corresponding extensive case law.

¹⁶For a detailed analysis of the factors and safeguards taken into account, see the judgments in *Comic Enterprises Limited v Twentieth Century Fox Film Corporation* [2012] EWPC 13 and *77M Ltd v Ordnance Survey Ltd* [2017] EWCH 1501 (IPEC).

distribution function for the damages and $g(\cdot)$ the corresponding density function. Moreover, for the sake of simplicity, we assume that D and p are independent variables so that the density of a pair (p, D) is given by $f(p)g(D)$.

Let c_p be the cost of filing a case and C_p the additional litigation costs that a plaintiff has to incur if he does neither drop the case nor settle. Also, denote C_d a defendant's litigation costs. We consider a general cost allocation rule under which a winning plaintiff recovers an amount $R_p \in [0, c_p + C_p]$ while a winning defendant recovers an amount $R_d \in [0, C_d]$. The polar case where $R_p = R_d = 0$ corresponds to a pure American rule, while the polar case where $R_p = c_p + C_p$ and $R_d = C_d$ corresponds to a pure English rule. Finally, we assume that litigation costs are common knowledge and that the potential plaintiffs and defendants are risk-neutral.

Let us consider the following game for each potential plaintiff:

Stage 1: The potential plaintiff decides whether to file a case (hence becoming a plaintiff). If he does not, the game ends. Otherwise, the game proceeds to the next stage.

Stage 2: The plaintiff makes a take-it-or-leave-it settlement offer to the defendant.

Stage 3: The defendant decides whether to accept the settlement offer. If he does, the game ends. Otherwise, the plaintiff incurs additional litigation costs C_p while the defendant incurs litigation costs C_d , and a decision regarding the infringement is issued by the court.

To ensure that the plaintiff's litigation threat in case settlement fails is credible¹⁷ (as is implicitly assumed in Stage 3) we assume that¹⁸

$$\underline{p} \geq \frac{C_p + C_d}{c_p + C_p + C_d + \underline{D}}. \quad (1)$$

3.2 Equilibrium analysis

Let us first consider Stage 3. The defendant knows that if he rejects the settlement offer, there will be a trial that will cost him in expectation:

$$p(D + C_d + R_p) + (1 - p)(C_d - R_d).$$

Thus, he accepts to pay an amount S to the plaintiff if and only if

$$S \leq p(D + C_d + R_p) + (1 - p)(C_d - R_d).$$

Denoting $\underline{S} = \underline{p}(D + C_d + R_p) + (1 - \underline{p})(C_d - R_d)$ and $\bar{S} = \bar{p}(D + C_d + R_p) + (1 - \bar{p})(C_d - R_d)$, we can distinguish three cases:

¹⁷In doing so we follow Bebchuk (1984) and the vast majority of screening models in the settlement literature (see Spier, 1992). A notable exception is Nalebuff (1987).

¹⁸To see why this condition implies that the plaintiff will never find it optimal to drop the case if settlement fails, note that his continuation value from not dropping the case is

$$p(D + R_p - C_p) - (1 - p)(C_p + R_d)$$

The latter is positive for any values $p \in [\underline{p}, \bar{p}]$, $D \in (\underline{D}, \bar{D}]$, $R_p \in [0, c_p + C_p]$ and $R_d \in [0, C_d]$ if Condition (1) is satisfied.

- If $S < \underline{S}$: the settlement offer is always accepted.
- If $S > \bar{S}$: the settlement offer is never accepted.
- If $\underline{S} \leq S \leq \bar{S}$: the settlement offer is accepted by a defendant of type p if and only if

$$p \geq \frac{S - C_d + R_d}{D + R_p + R_d} \equiv \hat{p}(D, R_p, R_d, S).$$

Intuitively, the probability that a settlement offer involving a given payment $S \in [\underline{S}, \bar{S}]$ is accepted by the defendant, i.e., $1 - F(\hat{p}(D, R_p, R_d, S))$, increases with the damages D and the plaintiff's recoverable cost R_p , and decreases with the defendant's recoverable cost R_d .¹⁹

Consider now the plaintiff's choice of the amount S requested from the defendant at Stage 2. Note first that the plaintiff will never find it strictly optimal to make a settlement offer involving a payment $S < \underline{S}$ or $S > \bar{S}$.²⁰ Moreover, the plaintiff knows that if his settlement offer involves a payment $S \in [\underline{S}, \bar{S}]$, there is a probability $1 - F(\hat{p})$ that it will be accepted and a probability $F(\hat{p})$ that it will be turned down. If the offer is accepted then the plaintiff's payoff is $S - c_p$. If the offer is turned down there will be a trial and the plaintiff's expected payoff will be

$$\hat{p}(D - C_p + R_p) - (1 - \hat{p})(C_p + R_d) - c_p$$

where

$$\hat{p} = \frac{1}{F(\hat{p})} \int_{\underline{p}}^{\hat{p}} pf(p)dp$$

is the average probability that the plaintiff prevails in court conditionally on the settlement offer being turned down by the defendant. Therefore, the plaintiff's expected payoff if he makes a settlement offer involving a payment $S \leq \bar{S}$ (D, R_p, R_d) is given by

$$\hat{\Pi}(D, R_p, R_d, S) = (1 - F(\hat{p}))S + F(\hat{p})[\hat{p}(D - C_p + R_p) - (1 - \hat{p})(C_p + R_d)] - c_p$$

To avoid a corner solution $S = \underline{S}$ (which would lead to all cases being settled), we assume that²¹

$$\frac{f(\underline{p})}{1 - F(\underline{p})} \leq \frac{\underline{D}}{C_p + C_d}, \quad (2)$$

Solving the plaintiff's maximization program leads to the following result.

¹⁹It can be easily checked that $\frac{\partial \hat{p}}{\partial R_d} = \frac{D + R_p + C_d - S}{(D + R_p + R_d)^2} \geq 0$ for any $S \leq \bar{S}$.

²⁰A settlement offer such that $S < \underline{S}$ leads to strictly lower profit for the plaintiff than a settlement offer such that $S = \underline{S}$. Moreover, all settlement offers involving payments $S > \bar{S}$ lead to the same payoff for the plaintiff as the settlement offer involving the payment $S = \bar{S}$. Therefore, we can focus on the range $[\underline{S}, \bar{S}]$ when solving the plaintiff's maximization program.

²¹This ensures that $\left. \frac{\partial \hat{\Pi}}{\partial S} \right|_{S=\underline{S}} > 0$ for any $D \in (\underline{D}, \bar{D}]$, $R_p \in [0, c_p + C_p]$ and $R_d \in [0, C_d]$.

Lemma 1. *The equilibrium settlement amount $S^*(D, R_p, R_d)$ and the corresponding threshold $p^*(D, R_p, R_d) = \hat{p}(D, R_p, R_d, S^*(D, R_p, R_d))$ above which a defendant accepts the settlement offer are given by*

$$\frac{f(p^*(D, R_p, R_d))}{1 - F(p^*(D, R_p, R_d))} = \frac{D + R_p + R_d}{C_p + C_d} \quad (3)$$

$$S^*(D, R_p, R_d) = p^*(D, R_p, R_d)(D + R_p + R_d) + C_d - R_d. \quad (4)$$

Considering now Stage 1, a potential plaintiff files a case if and only if

$$\Pi^*(D, R_p, R_d) \equiv \hat{\Pi}(D, R_p, R_d, S^*(D, R_p, R_d)) > 0,$$

which leads to the following result:

Lemma 2. *There exists a unique threshold $D^*(R_p, R_d) \geq \underline{D}$ such that a potential plaintiff files a case if and only if:*

$$D > D^*(R_p, R_d).$$

Proof. See Appendix C. □

This lemma shows that the equilibrium set of plaintiffs has a specific structure, which simplifies the subsequent analysis of the impact of a change in recoverable costs on the number (mass) of cases filed.

3.3 Effects of a change in recoverable costs

In this section we study the effects of a change in recoverable costs on the equilibrium number (mass) of cases filed and the equilibrium settlement rate. This allows us in particular to derive the effects of implementing a (binding) costs cap which amounts to a decrease in recoverable costs for *both* plaintiffs and defendants.

3.3.1 Number of cases filed

Let us consider first the effect of a change in recoverable costs on the number (mass) of cases filed by potential plaintiffs. The equilibrium mass of cases filed is given by

$$M^*(R_p, R_d) \equiv 1 - G(D^*(R_p, R_d)).$$

To investigate the effect of a change in recoverable costs on the mass of cases filed, we need to study how $D^*(R_p, R_d)$ depends on R_p and R_d . Assume that $\underline{D} < D^*(R_p, R_d)$ so that not all potential plaintiffs file a case. Then, $D^*(R_p, R_d)$ is such that

$$\Pi^*(D^*(R_p, R_d), R_p, R_d) = 0.$$

Differentiating the latter with respect to R_p and R_d yields

$$\frac{\partial D^*}{\partial R_p} = -\frac{\frac{\partial \Pi^*}{\partial R_p}}{\frac{\partial \Pi^*}{\partial D}} \quad \text{and} \quad \frac{\partial D^*}{\partial R_d} = -\frac{\frac{\partial \Pi^*}{\partial R_d}}{\frac{\partial \Pi^*}{\partial D}}.$$

We use this observation to prove the following proposition.

Proposition 1. *The equilibrium mass of cases filed increases with the plaintiffs' recoverable costs and decreases with the defendants' recoverable costs.*

Proof. See Appendix C. □

3.3.2 Settlement rate

Let us now turn to the effect of a change in recoverable costs on the settlement rate. The following proposition provides the effects of R_p and R_d on the probability of settlement for a given plaintiff, i.e.,

$$q^*(D, R_p, R_d) \equiv 1 - F(p^*(D, R_p, R_d)).$$

Lemma 3. *The probability of settlement for a given plaintiff decreases with both his and the defendant's recoverable costs, as well as with the amount of damages:*

$$\frac{\partial q^*}{\partial R_p} < 0 ; \frac{\partial q^*}{\partial R_d} < 0 \text{ and } \frac{\partial q^*}{\partial D} < 0$$

Proof. See Appendix C. □

The intuition behind this result is as follows. An increase in either R_p , R_d or D does not affect the joint surplus from settlement but makes the adverse selection problem faced by a plaintiff more severe: he finds it more costly to separate defendant types.²² This leads to a higher equilibrium borderline defendant type or, equivalently, a lower probability of settlement.

Lemma 3 captures only part of the effect of a change in recoverable costs on the settlement rate. The reason is that the set of potential plaintiffs filing a case is also affected by the recoverable costs. More precisely, the equilibrium settlement rate is given by

$$\theta^*(R_p, R_d) = \frac{\int_{D^*(R_p, R_d)}^{\bar{D}} q^*(D, R_p, R_d) g(D) dD}{\int_{D^*(R_p, R_d)}^{\bar{D}} g(D) dD}.$$

Let us first consider the effect of R_p on the settlement rate. Differentiating θ^* with respect to R_p and rearranging terms leads to

$$\begin{aligned} \frac{\partial \theta^*}{\partial R_p} &= \underbrace{\frac{\int_{D^*(R_p, R_d)}^{\bar{D}} \frac{\partial q^*}{\partial R_p}(D, R_p, R_d) g(D) dD}{\int_{D^*(R_p, R_d)}^{\bar{D}} g(D) dD}}_{\equiv H_p(R_p, R_d) < 0 \text{ (direct effect)}} + \underbrace{\frac{\frac{\partial M^*}{\partial R_p}}{\left[\int_{D^*(R_p, R_d)}^{\bar{D}} g(D) dD \right]^2} \int_{D^*(R_p, R_d)}^{\bar{D}} [q^*(D^*(R_p, R_d), R_p, R_d) - q^*(D, R_p, R_d)] g(D) dD}_{\equiv I_p(R_p, R_d) > 0 \text{ (indirect effect)}}. \end{aligned} \quad (5)$$

This shows that a change in plaintiffs' recoverable costs R_p has two effects: a *direct* effect (i.e., for a given set of plaintiffs) captured by the term $H_p(R_p, R_d)$, and an *indirect* effect, captured by the term $I_p(R_p, R_d)$, resulting from the change in the set of plaintiffs. It follows

²²Formally, $\frac{\partial \hat{p}}{\partial S}$ is decreasing in R_p , R_d and D .

from Lemma 3 that the direct effect is negative. However, the indirect effect is positive. To see why, note first that the equilibrium mass of cases filed M^* increases with R_p (see Proposition 1). Moreover, since the probability of settlement for a given plaintiff q^* is decreasing in D (see Lemma 3),

$$q^*(D^*(R_p, R_d), R_p, R_d) - q^*(D, R_p, R_d) > 0$$

for any $D \in (D^*(R_p, R_d), \bar{D}]$. Thus, the positive sign of the indirect effect comes from the result that an increase in plaintiffs' recoverable costs leads to more cases being filed, combined with the fact that the additional cases have a higher probability of settlement because they involve lower damages.

Let us now consider the effect of a change in R_d on the equilibrium settlement rate. Differentiating θ^* with respect to R_d yields

$$\begin{aligned} \frac{\partial \theta^*}{\partial R_d} = & \frac{\int_{D^*(R_p, R_d)}^{\bar{D}} \frac{\partial q^*}{\partial R_d}(D, R_p, R_d) g(D) dD}{\underbrace{\int_{D^*(R_p, R_d)}^{\bar{D}} g(D) dD}_{\equiv H_d(R_p, R_d) < 0 \text{ (direct effect)}}} + \\ & \underbrace{\frac{\frac{\partial M^*}{\partial R_d}}{\left[\int_{D^*(R_p, R_d)}^{\bar{D}} g(D) dD \right]^2} \int_{D^*(R_p, R_d)}^{\bar{D}} [q^*(D^*(R_p, R_d), R_p, R_d) - q^*(D, R_p, R_d)] g(D) dD}_{\equiv I_d(R_p, R_d) < 0 \text{ (indirect effect)}}. \end{aligned} \quad (6)$$

This shows that a change in defendants' recoverable costs has also both a direct and an indirect effect on the settlement rate. As in the case of a change in the plaintiffs' recoverable costs the direct effect is negative. However, the indirect effect is now negative because the equilibrium mass of cases filed M^* decreases with R_d .

The following lemma summarizes the effects of recoverable costs on the equilibrium settlement rate.

Lemma 4. *An increase in plaintiffs' (defendants') recoverable costs has two effects on the settlement rate: a direct effect, i.e., for a fixed set of plaintiffs, which is negative, and an indirect effect, resulting from the change in the set of plaintiffs, which is positive (negative).*

Therefore, we get the following result:

Proposition 2. *The equilibrium settlement rate is negatively affected by defendants' recoverable costs, while it is ambiguously affected by plaintiffs' recoverable costs.*

3.3.3 Effects of a costs cap

Since implementing a (binding) costs cap amounts to *reducing* the recoverable costs for both the plaintiffs and the defendants, it follows from Propositions 1 and 2 that the effect of a costs cap on the number of case filings and the settlement rate is ambiguous in general. More precisely, denoting \tilde{R}_p and \tilde{R}_d the initial recoverable costs for plaintiffs and defendants

respectively, and $\bar{R} < \min(\tilde{R}_p, \tilde{R}_d)$ the costs cap, the effect of the costs cap on the number (mass) of cases filed can be written as

$$M^*(\bar{R}, \bar{R}) - M^*(\tilde{R}_p, \tilde{R}_d) = \underbrace{M^*(\bar{R}, \bar{R}) - M^*(\tilde{R}_p, \bar{R})}_{<0} + \underbrace{M^*(\tilde{R}_p, \bar{R}) - M^*(\tilde{R}_p, \tilde{R}_d)}_{>0}$$

and the effect of the costs cap on the settlement rate can be written as

$$\begin{aligned} \theta^*(\bar{R}, \bar{R}) - \theta^*(\tilde{R}_p, \tilde{R}_d) &= \theta^*(\bar{R}, \bar{R}) - \theta^*(\tilde{R}_p, \bar{R}) + \theta^*(\tilde{R}_p, \bar{R}) - \theta^*(\tilde{R}_p, \tilde{R}_d) \\ &= \int_{\tilde{R}_p}^{\bar{R}} \frac{\partial \theta^*}{\partial R_p}(R_p, \bar{R}) dR_p + \int_{\tilde{R}_d}^{\bar{R}} \frac{\partial \theta^*}{\partial R_d}(\tilde{R}_p, R_d) dR_d \\ &= \underbrace{\int_{\tilde{R}_p}^{\bar{R}} H_p(R_p, \bar{R}) dR_p}_{>0} + \underbrace{\int_{\tilde{R}_d}^{\bar{R}} H_d(\tilde{R}_p, R_d) dR_d}_{>0} + \underbrace{\int_{\tilde{R}_p}^{\bar{R}} I_p(R_p, \bar{R}) dR_p}_{<0} + \underbrace{\int_{\tilde{R}_d}^{\bar{R}} I_d(\tilde{R}_p, R_d) dR_d}_{>0} \\ &\quad \text{direct effect of the cost cap } >0 \qquad \qquad \qquad \text{indirect effect of the cost cap (ambiguous sign)} \end{aligned}$$

where the signs of the four terms above follow from the signs of $H_p(R_p, \bar{R})$, $H_d(\bar{R}, \tilde{R}_d)$, $I_p(R_p, \bar{R})$, $I_d(\bar{R}, \tilde{R}_d)$ (defined in (5) and (6)) and the fact that $\bar{R} < \tilde{R}_p$ and $\bar{R} < \tilde{R}_d$.

The ambiguity of the impact of the costs cap on the number of cases filed stems from the fact that a decrease in potential plaintiffs' recoverable costs has a negative effect on their incentives to file a case, while a decrease in defendants' recoverable costs encourages potential plaintiffs to file cases. The sign of the overall effect depends on which of these two effects outweighs the other one.

The ambiguity of the impact of the costs cap on the settlement rate has a different source: it follows from a potential tension between the positive direct effect of a decrease in both parties' recoverable costs on the settlement rate and the ambiguous indirect effect of such a decrease on the settlement rate.

We now provide two implications of our model that allow to derive (i) the relative magnitude of the opposite effects of the costs cap on case filings from the empirical observation of the overall effect of the costs cap on case filings, and (ii) the sign and magnitude of the indirect effect of the costs cap on the settlement rate relative to its direct effect from the observation of the overall effect of the costs cap on the settlement rate. These insights derived from our model will allow us to interpret the mechanisms underlying the empirically observed effects of the costs cap on the number of case filings and settlements in Section 5.

Implication 1. (*number of cases*) *If the overall effect of the costs cap on the number of cases filed is positive (negative) then the positive effect of the reduction in defendants' recoverable costs outweighs (is outweighed by) the negative effect of the reduction in plaintiffs' recoverable costs.*

Implication 2. (*settlement rate*) *If the overall effect of the costs cap on the settlement rate is negative then the indirect effect of the costs cap is necessarily negative and outweighs its positive direct effect. However, if the overall effect of the costs cap is positive then the indirect effect of the costs cap on the settlement rate is either positive, or negative with a magnitude lower than that of the positive direct effect of the costs cap.*

4 Data

This section describes the detailed information collected from physical IP case court records at the IPEC and the High Court for 2007-2013. Note that for the remainder of this article, we will refer to the PCC/IPEC simply as IPEC and to the PHC/HC simply as PHC.

4.1 IPEC

We collected information on all IP cases filed at the IPEC for the entire period 2007-2013. In order to do this, we compiled the physical IPEC court records/files and associated information for all cases filed 2007-2013, extracted the relevant information, and compiled it into a single database. Because the record keeping at the IPEC is largely paper-based, there are a very small number of cases for which we were unable to obtain any information except for the case number. Nonetheless, we are confident that we have collected information on every possible physical IPEC case file for 2007-13. We double checked our data in September 2014 with the available IPEC judgments for 2007-2013 online (via court document repository BAILII); reassuringly, we did not find any cases that we did not already have a record of from our search of the physical files (for more details on the data collection see appendix D).

For IPEC cases, the information that we collected for all types of IP contains detailed information on the start date of the case, the initial and counter claims (infringement, revocation etc.), the names of the litigating parties, information on the relevant IP right (including patent numbers, trade mark numbers, etc.), and the outcomes of the cases. We also gathered information on whether cases were transferred from the IPEC to the PHC or vice versa to analyze any potential spillover effects of the reform on the PHC. These data were collected during the period September 2013-July 2014 and are up to date in terms of outcomes (decided cases, settlements etc.) up to July 2014.

4.2 PHC

In contrast with the IPEC records from 2007-2013, the PHC IP case files are not held in a unique location, but are shuffled within the general Chancery section that hears a large range of claims, including insolvency claims, business and property disputes etc. There is no list of IP-specific case numbers which are attributable to the various IP Chancery cases. In order to identify IP cases, we had to physically go through each of the estimated 5,000 Chancery Division case files for each year, one-by-one, to check if it is an IP-related claim or another Chancery matter. For the PHC patent cases, we collected the same set of information as in the case of the IPEC for all PHC patent cases filed 2007-2013. However, to keep the data collection manageable, for the other types of IP rights (copyright, designs, database rights, and trade marks), we collected information only on basic case characteristics, such as the names of the parties, filing date, claims, etc. (see appendix D).

Note that court records for patent cases were available for the entire 2007-2013 period, whereas for all other IP rights, court records were only available for the period 2009-2013.²³ Regarding the patent data, there is a caveat for 2007, however. According to the U.K.

²³The pre-2009 files had been moved into external storage where they could not be retrieved.

Courts & Tribunals Service (HMCTS) some 2007 Chancery files were destroyed in a fire during 2008. As a result our PHC numbers for 2007 have to be treated cautiously as it is likely some PHC claims were destroyed before we could examine them. That said, it is reasonable to assume that files were randomly destroyed by the fire and hence it should not necessarily affect case characteristics in 2007 (including case outcomes). Similar to the IPEC data collection, we undertook a number of checks to ensure the completeness of the patent data which are described in appendix D.

4.3 Firm-level data

We obtained the names of all litigating parties from the court records as described above. We first cleaned and standardized these names as they often appear in different ways on different court records. In a second step we classified litigants into 3 categories: (i) companies, (ii) individuals, and (iii) government, universities, and not-for-profit entities. In a third step, we identified non-U.K. litigants where possible (e.g. through information available in the court records, or corporate designators such as ‘inc’). Finally, we searched for all U.K. companies on Companies House’s online [WebCheck](#) as well as Bureau van Dijk’s FAME database. We obtained basic information on companies from Companies House (SIC code, incorporation date, current status, etc.) and detailed financials from FAME (assets, turnover, employees etc.). The combination of information from Companies House and financials from FAME allowed us to classify companies into size categories (micro/SME, large).²⁴ We also used the firm-level information in combination with additional information from web-searches to consolidate litigants at the business group level. This avoids double-counting litigants when for example the U.K. subsidiary appears as a plaintiff together with the U.S. holding company. Finally, using the matched firm-level data as well as information from court records, we determined whether litigants were based in the U.K., elsewhere in Europe, or outside of Europe.

5 Empirical analysis

5.1 Descriptives

Table 1 shows the total case counts by IP right for the IPEC as well as the PHC during the period 2007-2013.²⁵ The largest number of cases concerns trade mark/passing off claims (332 cases) followed by copyright (245) and design (159) cases. Regardless of the type of IP, there is a notable jump in case numbers that occurs between 2010 and 2011 which coincides with the introduction of the costs cap in October 2010. It is tempting to conclude from these figures that case numbers for all IP rights have substantially increased at the

²⁴We follow the standard [EU definition](#), which relies on information on a firm’s number of employees, turnover, and total assets.

²⁵We exclude SCT cases throughout our analysis as they differ substantially in observable and presumably unobservable characteristics from the main IPEC multi-track cases. For the same reason we also exclude all copyright cases filed by the music licensing company PPL (Phonographic Performance Limited) at both the IPEC and PHC. These cases account for the large majority of copyright cases at the PHC. Note also that as explained in appendix D.2, for the PHC we only have data for the entire 2007-2013 period for patents. For all other IP rights, our PHC data are limited to 2009-2013.

IPEC as a result of the costs cap. However, the corresponding figures for the PHC caution against hasty conclusions. As expected, for all IP rights (except designs), total case counts are significantly larger than at the IPEC. For some IP rights, in particular patents, we also see large increases in case counts between 2010 and 2011. Patent case counts increased between 2010 and 2011 by 97%. Case counts for other IP rights, however, increased only moderately or even dropped. In fact, if we take all IP rights into account, total case counts at the IPEC increased by nearly 50% and at the PHC by only 11% between 2010 and 2011. This suggests on the one hand that the costs cap has led to a large increase in case filings at the IPEC, on the other, it also suggests that factors other than the IPEC reforms might have affected in particular patent case filings during the critical time period.

Table 1: PCC/IPEC an PHC case counts, 2007-2013

Year	Patent		Trade mark		Design		Copyright		Database		Total	
	IPEC	PHC	IPEC	PHC	IPEC	PHC	IPEC	PHC	IPEC	PHC	IPEC	PHC
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
2007	5	30	3		3		8		0		19	30
2008	4	64	14		3		29		0		50	64
2009	8	43	61	63	15	14	28	54	2	4	114	178
2010	8	44	43	105	17	41	33	68	2	16	103	274
2011	25	87	51	101	26	21	48	74	3	21	153	304
2012	22	84	76	94	37	13	41	50	1	7	177	248
2013	17	56	84	58	44	19	58	69	4	6	207	208
Total	89	408	332	421	159	108	245	315	12	54	823	1,306

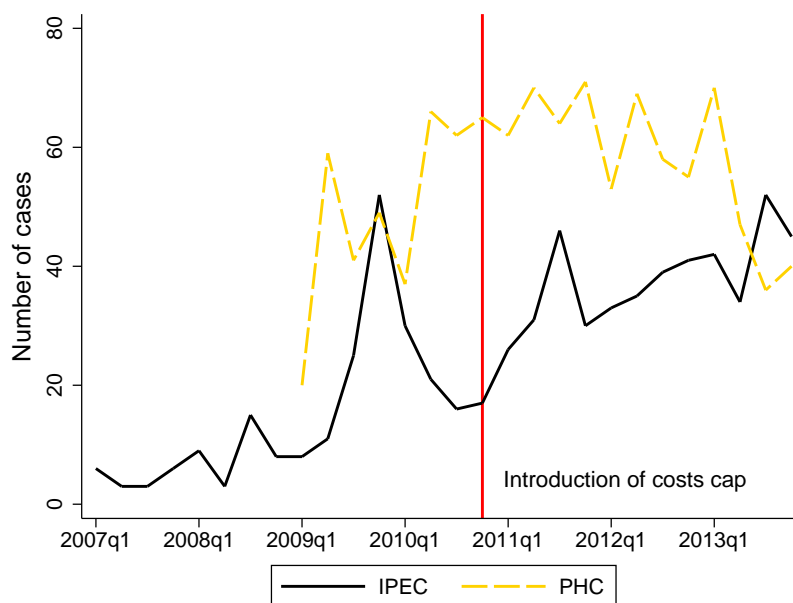
Notes: Note: For PHC no data available for trade marks, design, copyright, and database rights prior to 2009; trade mark case count includes passing-off claims; design cases includes registered and unregistered design rights. Copyright case counts exclude cases brought by performance rights organisation PPL (Phonographic Performance Limited).

Figure 1 investigates this issue further. It plots all cases by filing date of the claim over time (in quarterly intervals). Since we only possess data on patent cases at the PHC before 2009, we only show PHC case counts from 2009 onward.²⁶ The vertical line represents the introduction of the costs cap in October 2010. We see a clear increase in filings at the IPEC during the quarter following the introduction of the costs cap and a continued increase in case filings over the remainder of the time period for which we have data. This finding is in-line with the evidence we gathered from qualitative interviews and surveys where respondents indicated that they regarded the costs cap as the key reform. Note that the spike in case filings at the IPEC at the end of 2009 is due to Nike's and Nintendo's idiosyncratic litigation behavior, filing 26 trade mark and 9 trade mark and copyright claims in December 2009, respectively. That said, Figure 1 also shows an increase in case filings at the PHC during the second quarter of 2011. We know from Table 1 that this increase was mainly due to an increase in patent filings. This could imply that the increase at the

²⁶Note that for this figure, we drop all cases at the IPEC and PHC (patents) that were dropped by the plaintiff or for which only the claim form but no response by the defendant was filed and restrict the sample to cases where parties are companies – which are also the data used in our settlement analysis in Section 5.4 in accordance with our theoretical analysis in Section 3.

IPEC was to some extent the result of a general trend towards more patent case filings. Nonetheless, a crucial point can be observed: the average growth rate of case filings during the first three quarters of 2011 is zero at the PHC whereas it is over 35% at the IPEC. In other words, the IPEC saw substantial growth in case filings following the introduction of the costs cap even when compared to the PHC.

Figure 1: Comparison IPEC-PHC: all cases



Note: Copyright case counts exclude cases brought by performance rights organisation PPL (Phonographic Performance Limited). Figure shows only cases where parties are companies.

As mentioned above, we have data on patent cases at both courts for the entire 2007-2013 period. Figure A-1 in the appendix shows the number of patent cases (by filing date of the claim form) by quarter. The figure shows a clear difference in the levels of patent litigation at the PHC and the IPEC. We see a noticeable increase in patent cases following the introduction of the costs cap in October 2010 (from 2 case filings in the last quarter of 2010 to 6 in the first quarter of 2011). However, as noted above, case counts at the PHC also increased substantially between October 2010 and early 2011 (from 10 cases in the last quarter of 2010 to 22 in the second quarter of 2011). Nonetheless, as stated above, it is likely the PHC litigation rate increased due to additional factors, such as generally increased litigation in information and communication technologies (for example Nokia filed 4 cases in the first half of 2011 compared to just 1 case in the first half of 2010).²⁷

²⁷It is possible that the factors that have led to the large increase in patent case filings at the PHC did not affect the IPEC to the same extent and hence the increase in patent case filings observed at the IPEC can in fact be largely attributed to the reforms. If this is indeed the case, we would underestimate the increase in case filings at the IPEC due to the introduction of the costs cap. See also Section 5.2.

5.2 Empirical approach

As discussed in Section 2 above, there are several potential concerns with our approach of relying on litigation at the PHC as a control group. First, as explained in Section 2.2, while the IPEC and PHC hear cases on the same subject matter, there exists a clear separation between the courts in terms of the types of cases heard by each court. The PHC hears more complex cases which often involve large companies litigating factually and legally complex issues. Prior to the reforms, the distinction between the complex cases heard at the PHC level and the more straightforward ones heard at the PCC was clear. Prominent complex cases heard at the PHC include the seminal trade mark case of *L’Oreal SA v eBay International AG*,²⁸ which concerned the duties of online auction sites such as eBay to prevent the sale of counterparts; and the significant patent case of *Generics (UK) Ltd and others v H Lundbeck A/S* on the application of the concept of insufficiency to the validity of a granted patent.²⁹ Both cases clarified key points of IP law in the UK. These cases can be contrasted with relatively straightforward patent and trade mark cases heard at the PCC such as *Corus UK Ltd v Qual-Chem Ltd* and *Zaba’ish Ltd v Zebaish Clothing Ltd* both of which merely involved the application of existing principles to a set of basic facts. This raises the concern that litigation at the PHC may not be an appropriate control group if litigation of complex issues between large companies follows a different trend and is possibly subject to different unobservable shocks. To address this issue, we limit the sample to cases where the plaintiff is a SME which allows us to focus on similar cases. If multiple parties appear as plaintiff, we classify the plaintiff as large if at least one party is a large firm.³⁰ Figure 2 shows the case counts for the sample of cases that consists only of SME plaintiffs. In Figure 2, case counts follow similar trends before the reforms and only start to diverge significantly following the introduction of the costs cap.

To probe the validity of this approach further, Figure 3, shows the β_t coefficients of the following regression $case_t = \beta_0 + \beta_t[IPEC \times D_t] + \varepsilon_t$ where $case_t$ denotes the log total number of cases by quarter t , $IPEC$ is a dummy (0/1) variable that is equal to one for all cases heard at the IPEC, and D_t are quarter dummies. We see that before the introduction of the costs cap, the IPEC-specific time trend is negative and often not statistically significant which supports the common trends assumption required for the PHC to be a valid control group. Following the introduction of the costs cap, the coefficients turn positive and are statistically significantly different from zero for most quarters after the reform.

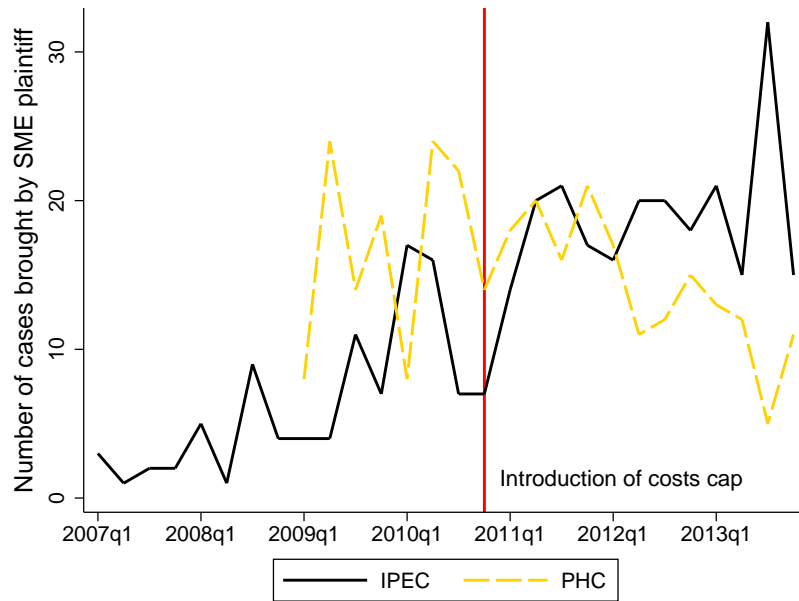
Second, as also discussed in Section 2.2, there is a possibility that the IPEC reforms immediately pushed relatively high-value and more complex IP cases into the PHC rather than the IPEC. However, given the relatively low rate of patent litigation at the PCC prior to the reforms coming into force, it seems unlikely that this effect would be large enough to explain the large increase in case filings at the PHC after the IPEC reforms set in. Similarly, it is possible that cases that would have been filed at the PHC in the absence of the reforms were filed at the IPEC after the costs cap was introduced. As explained in Section 2.2,

²⁸*L’Oreal SA v eBay International AG* [2009] EWHC 1094 (Ch); [2009] E.T.M.R. 53, which was referred to the European Court of Justice.

²⁹*Generics (UK) Ltd and others v H Lundbeck A/S* [2007] EWHC 1040 (Pat), [2007] RPC 32 which was appealed to the Court of Appeal [2007] EWCA Civ 5, and the UK House of Lords [2008] UKHL 49.

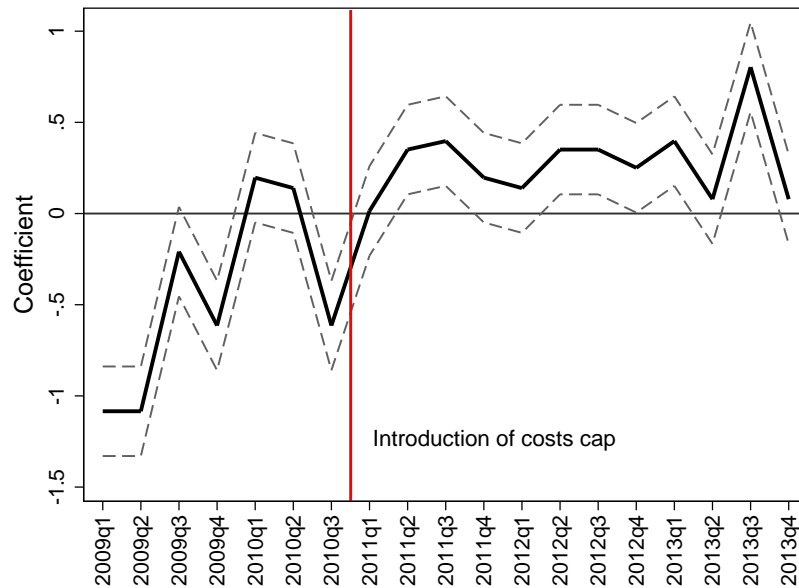
³⁰The most common case is that a subsidiary and its holding company appear together before the court. Note that the sample of SME plaintiffs consists only of companies which excludes a small number individual plaintiffs and defendants, institutions, universities, and government bodies.

Figure 2: Comparison IPEC-PHC: all cases brought by SME plaintiffs



Note: Copyright case counts exclude cases brought by performance rights organisation PPL (Phonographic Performance Limited). Figure shows only cases where parties are companies.

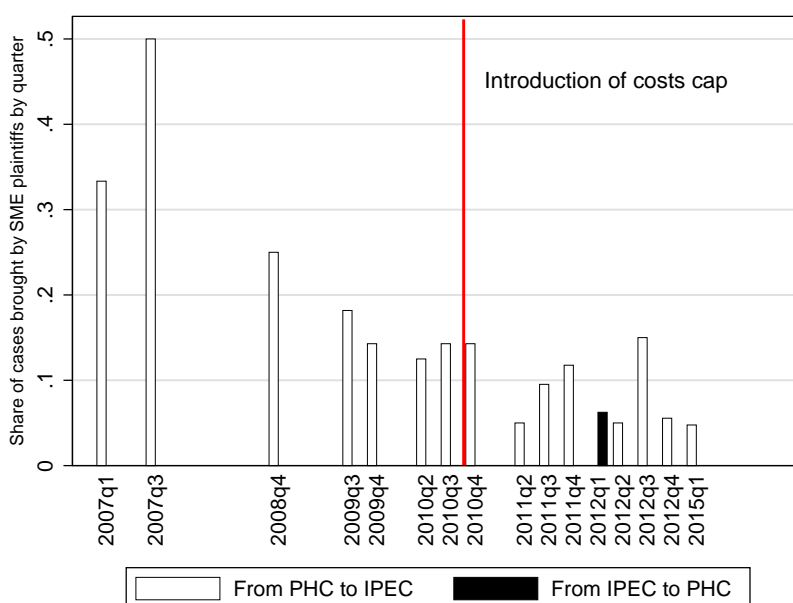
Figure 3: Estimated effect of costs cap: all cases brought by SME plaintiffs



Note: The figure shows the β_t coefficients of the following regression $case_t = \beta_0 + \beta_t[IPEC \times D_t] + \varepsilon_t$ where $case_t$ denotes the log total number of cases by quarter t , $IPEC$ is a dummy (0/1) variable that is equal to one for all cases heard at the IPEC, and D_t are quarter dummies. 95% confidence intervals reported.

there are a number of legal safeguards in place that are strictly enforced by the IPEC and PHC judges which mean that if this type of forum shopping indeed occurred, we should see at least some increase in cases transferred to or from the IPEC. Figure 4 shows actual case transfers between the two venues before and after the reforms as a share of total case filings by SME plaintiffs. As shown in Figure 4, the share of cases transferred out of the IPEC to the PHC is negligible and the share of cases transferred from the PHC to the IPEC is extremely low. This is reflected in the absolute number of cases transferred from the PHC to the IPEC shown in Figure A-2 in the appendix. The appendix also shows case transfers for the entire sample, which display a very similar pattern. Therefore, there is no evidence for any significant increase in transfers immediately following the reforms either from the IPEC to the PHC or vice versa.

Figure 4: Case transfers: cases brought by SME plaintiffs by quarter



5.3 Case counts

In order to analyze the effect of the introduction of the costs cap on case filings, Table 2 shows regression results from OLS regressions where we regress the log of the total number of cases by month ($case_t$) on a dummy (0/1) variable that is equal to one for all cases heard at the IPEC ($IPEC$) – a dummy variable that indicates when the costs cap was introduced at the IPEC ($Postreform_t$) which is equal to one from October 2010 onward and their interaction ($IPEC \times Postreform_t$):

$$case_t = \beta_0 + \beta_1 IPEC + \beta_2 Postreform_t + \beta_3 IPEC \times Postreform_t + \delta_t + \varepsilon_t \quad (7)$$

The coefficient on the interaction term β_3 captures the differential effect of the costs cap on case filings at the IPEC. Note that in general it is impossible to assess changes in plaintiffs'

propensity to file a claim with the court because this would require information not only on observed court cases but also the total underlying legal disputes that could potentially result in a court case (i.e. court cases plus disputes that never make it to court). However, in our setting we are able to identify a change in the filing propensity because we identify it off changes in the number of cases filed at the IPEC following the introduction of the costs cap *relative* to changes in the number of cases filed at the PHC. Hence, our approach allows for the total potential number of claims that is unobservable to change over time as long as these changes follow the same trend at the IPEC and the PHC. This is a distinct advantage of our quasi-experimental setting over analysis relying on purely observational data.

We begin by showing simple before-and-after comparisons for both the IPEC and PHC in columns (1) and (2). In both cases, we see a positive coefficient on the *Postreform* dummy variable, which implies that the number of cases increased at both the IPEC and the PHC following the reforms. In column (3) we use both the IPEC and PHC data and add monthly fixed effects as well as dummy variables for the different types of IP rights (patents, trade marks, copyright, registered designs, database rights). The PHC data controls for any unobservable confounding factors that could have affected IP litigation in the U.K. more generally and hence allow us to isolate the impact of the costs cap on case counts. In column (3), we observe that neither the coefficient on the IPEC dummy nor on the *Postreform* dummy are statistically significant. This suggests that the the *Postreform* dummy is not simply picking up a time trend in the data. In columns (4)-(5), we add the interaction term $IPEC \times Postreform$ and distinguish between cases where the plaintiff is a SME and cases that involve a SME as plaintiff and/or defendant. In columns (4) and (5), we find a large positive coefficient on the interaction term that is statistically significant; it suggests that the number of cases that were brought before the IPEC that involve SMEs has increased significantly following the reforms, even relative to the PHC. Following Implication 1 derived from the model, our empirical findings suggest that the positive effect of the reduction in the defendants' recoverable costs outweighs the negative effect of the reduction in the plaintiffs' recoverable costs. While this is by no means a general result, it does show that a costs cap can be designed in a way that increases IP enforcement by SMEs, which was one of the motivations behind the IPEC reforms.

5.4 Settlements

In this section, we investigate any potential changes to the settlement rate following the introduction of the costs cap. To do this, we estimate the following probit regression at the case-level:

$$settle_{it} = \beta_0 + \beta_1 IPEC_i + \beta_2 Postreform_t + \beta_3 IPEC_i \times Postreform_t + \gamma X_{it} + \delta_t + \varepsilon_{it} \quad (8)$$

where $settle_{it}$ denotes whether case i filed in quarter t was settled (the variable is equal to one if the case was settled),³¹ $IPEC_i$ denotes whether case i was brought before the IPEC (the variable is equal to one if the case was brought before the IPEC and zero if it was brought before the PHC), and $Postreform_t$ is equal to one after the introduction of the costs cap in October 2010. The specification in (8) contains also a large number of case-

³¹Note that our results are robust to the choice of time interval for our analysis, i.e., by quarter or year.

Table 2: IPEC and PHC: total number of SME court cases by month, 2009-2013

	<u>IPEC</u>	<u>PHC</u>	<u>IPEC & PHC</u>		
		SME Plaintiff			All SME
	(1)	(2)	(3)	(4)	(5)
IPEC			0.098 (0.124)	-0.301 (0.212)	-0.405*** (0.142)
Postreform	0.585*** (0.133)	-0.097 (0.167)	-0.184 (0.723)	-0.449 (0.416)	-0.106 (0.373)
IPEC×Postreform				0.584** (0.239)	0.409** (0.173)
IP type FE	NO	NO	YES	YES	YES
Month FE	NO	NO	YES	YES	YES
R2	0.283	0.007	0.504	0.557	0.669
Number obs.	60	60	120	120	120

Notes: OLS regression. Dependant variable log(number of cases by month +1). All regressions include a constant. Time period for all IP is 2009-2013 because no data are available for trade marks, design, copyright and database rights at the PHC prior to 2009; data for patent cases for 2007-2013; trade mark case count includes passing-off claims; design cases includes registered and unregistered design rights. Case counts exclude cases brought by performance rights organisation PPL (Phonographic Performance Limited). IP type FE: dummy variable for each type of IP right (patent, trade mark, copyright, registered design, database). Robust standard errors. * significant at 10%, ** at 5%, *** at 1%.

and litigant-level, as well as IP right specific characteristics X_{it} to account for observable heterogeneity among cases (for details see appendix E). Note that the sample of cases at the PHC is limited to patent cases since we were unable to collect detailed information on case outcomes for all other IP rights at the PHC. For the settlement analysis, we drop all cases at the IPEC and PHC that were dropped by the plaintiff, for which only the claim form but no response by the defendant was filed, or which were still pending in first instance.

Before discussing the results, Table 3 shows a comparison of means of a number of case and litigant characteristics as well as settlements between cases at the IPEC and the PHC. Cases at the PHC differ significantly in many ways from cases heard at the IPEC. IPEC cases are more likely to have been transferred to the IPEC (from local courts), infringement claims are a lot more and invalidity claims a lot less frequent at the IPEC, and litigants are more often U.K. based companies. These differences are to be expected given the different mandates of the two courts. This suggests that controlling for observable case and litigant characteristics is important in the estimation of equation (8). That said, when we restrict the sample to patent cases, there are few statistically significant differences between the two courts.

Table 4 shows the results where we report marginal effects for our probit estimates (for descriptive statistics see Tables A-1 and A-2 in the appendix). In columns (1)-(3) of Table 4, we use data on all IP cases at the IPEC and patent cases at the PHC brought by SME plaintiffs. We see that regardless of the specification shown in columns (1)-(3), the $IPEC_i \times Postreform_t$ interaction term is negative and statistically significant suggesting a drop in the propensity to settle at the IPEC relative to the PHC after the costs cap was introduced. In columns (4)-(6), we increase the sample size by including all cases that involved a SME as plaintiff and/or defendant. The results are very similar to the ones shown in columns (1)-(3), the interaction term is negative and statistically significant. In columns (7)-(9) we restrict the sample at the IPEC to patent cases. This makes IPEC cases more comparable in terms of observable characteristics to the PHC control sample (see Table 3). Moreover, one might also expect the costs cap to be more binding for patent cases which tend to be more expensive than other IP cases due to increased underlying technological complexity. We see that the coefficient on the interaction term is still negative and statistically significant. These results suggest that the introduction of a costs cap and hence the shift away from the English towards the American rule has led to a decrease in settlements. According to Implication 2 derived from our model, this empirical finding suggests that the indirect effect on the settlement rate we uncovered in our theoretical analysis is significant enough to outweigh the direct effect emphasized in the existing literature.

There is a concern that the settlement rate might be upward biased during the last few quarters of the sample period due to pending cases. That is, if pending cases are less likely to settle, having more pending cases in the sample will lead to a seemingly higher settlement rate. In the case of the IPEC, this effect would work in the opposite direction of the effect found in Table 4, and hence imply that we underestimate the negative effect. However, in the case of the PHC, this effect could mean that we overestimate the negative IPEC effect relative to the PHC – the settlement rate at the PHC would increase relative to the IPEC. To investigate these concerns, Table A-3 in the appendix shows results when we drop all cases filed in 2013, as they are the ones most likely to be pending at the time the data were collected. Dropping the last year of the sample also addresses potential concerns that the introduction of the SCT might have affected litigation in the IPEC multi-track. The

Table 3: IPEC and PHC: differences in means, 2007-2013

Year	Mean		Diff.	# Obs.	
	PHC	IPEC		PHC	IPEC
	(1)	(2)	(3)	(4)	(5)
SME plaintiffs					
Settled	0.790	0.608	0.181**	43	289
<i>Case characteristics</i>					
Case transferred	0.023	0.190	-0.167***	43	289
ln case value	11.807	10.407	1.399***	14	150
Infringement claim	0.627	0.951	-0.323***	43	289
Invalidity claim	0.232	0.031	0.201***	43	289
<i>Litigant characteristics</i>					
Defendant SME	0.581	0.602	-0.020	43	289
Plaintiff Europe	0.069	0.006	0.062***	43	289
Plaintiff World	0.093	0.020	0.072***	43	289
Defendant Europe	0.162	0.024	0.138***	43	289
Defendant World	0.162	0.031	0.131***	43	289
All SMEs					
Settled	0.778	0.684	0.094*	95	457
<i>Case characteristics</i>					
Case transferred	0.010	0.227	-0.217***	95	457
ln case value	11.315	10.443	0.872***	24	241
Infringement claim	0.778	0.949	-0.170***	95	457
Invalidity claim	0.115	0.030	0.085***	95	457
<i>Litigant characteristics</i>					
Plaintiff SME	0.494	0.660	-0.166***	95	457
Defendant SME	0.789	0.735	0.054	95	457
Plaintiff Europe	0.263	0.050	0.212***	95	457
Plaintiff World	0.242	0.080	0.161***	95	457
Defendant Europe	0.136	0.017	0.119***	95	457
Defendant World	0.115	0.021	0.093***	95	457
All SMEs – patents					
Settled	0.765	0.642	0.122	81	42
<i>Case characteristics</i>					
Case transferred	0.012	0.214	-0.201***	81	42
ln case value	11.216	11.716	-0.500	22	12
Infringement claim	0.777	0.761	-0.015	81	42
Invalidity claim	0.111	0.095	0.015	81	42
<i>Litigant characteristics</i>					
Plaintiff SME	0.493	0.785	-0.291***	81	42
Defendant SME	0.790	0.785	0.004	81	42
Plaintiff Europe	0.234	0.119	0.115	81	42
Plaintiff World	0.246	0.023	0.223	81	42
Defendant Europe	0.135	0.071	0.064	81	42
Defendant World	0.135	0.119	0.016	81	42

Notes: Note: For PHC no data available for trade marks, design, copyright and database rights prior to 2009; trade mark case count includes passing-off claims; design cases includes registered and unregistered design rights. Copyright case counts exclude cases brought by performance rights organisation PPL (Phonographic Performance Limited). Cases at the IPEC and PHC (patents) excluded if the plaintiff dropped the case unilaterally (no settlement) or only a claim form was filed and there is no response by the defendant or other actions by the plaintiff.

Table 4: IPEC and PHC: settlement decision by quarter – only cases involving SMEs, 2007-2013

	SME Plaintiff			All SME					
	All IP			All IP			Patents		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Costs cap</i>									
IPEC	-0.052 (0.123)	-0.031 (0.131)	-0.063 (0.143)	-0.034 (0.100)	-0.015 (0.106)	-0.001 (0.113)	-0.004 (0.156)	0.028 (0.152)	0.108 (0.092)
Postreform	0.165 (0.276)	0.240 (0.296)	0.705** (0.253)	-0.863*** (0.061)	-0.850*** (0.068)	-0.768*** (0.117)	0.535* (0.291)	0.142 (0.366)	0.880*** (0.148)
IPEC×Postreform	-0.362* (0.190)	-0.433* (0.195)	-0.677*** (0.129)	-0.179 (0.116)	-0.230* (0.116)	-0.392*** (0.117)	-0.456** (0.224)	-0.539** (0.118)	-0.934*** (0.081)
<i>Case characteristics</i>									
Case transferred	0.003 (0.075)	0.016 (0.076)	0.023 (0.074)	0.046 (0.054)	0.051 (0.054)	0.055 (0.054)	0.051 (0.143)	0.066 (0.142)	0.029 (0.090)
In case value	0.084 (0.035)	0.088** (0.037)	0.075** (0.035)	0.028 (0.023)	0.033 (0.023)	0.030 (0.024)	0.127* (0.065)	0.148** (0.063)	0.055 (0.043)
Infringement claim		0.091 (0.150)	0.195 (0.197)		-0.105 (0.084)	-0.073 (0.094)			0.088 (0.170)
Invalidity claim		0.101 (0.133)	0.132 (0.138)		0.002 (0.116)	0.033 (0.119)			-0.032 (0.152)
<i>Litigant characteristics</i>									
Plaintiff SME				-0.087* (0.049)	-0.079 (0.054)	-0.079 (0.056)	0.102 (0.114)	0.133 (0.122)	0.338*** (0.140)
Defendant SME		0.104* (0.061)	0.095 (0.063)	0.104* (0.057)	0.103* (0.060)	0.098* (0.060)	0.012 (0.115)	-0.027 (0.139)	0.122 (0.137)
Plaintiff Europe		-0.106 (0.237)	-0.223 (0.266)		-0.033 (0.091)	-0.139 (0.110)		0.087 (0.105)	-0.121 (0.141)
Plaintiff World		0.132 (0.133)	0.248** (0.064)		0.087 (0.068)	0.082 (0.073)		0.121 (0.104)	0.088 (0.051)
Defendant Europe		0.008 (0.156)	0.137 (0.127)		-0.178 (0.134)	-0.166 (0.143)		-0.181 (0.154)	-0.045 (0.117)
Defendant World		0.182 (0.103)	0.191 (0.103)		0.008 (0.118)	0.019 (0.123)		-0.012 (0.148)	0.009 (0.088)
NPE		-0.582** (0.137)	-0.687*** (0.064)		-0.012 (0.158)	-0.089 (0.199)		-0.202 (0.218)	-0.666** (0.258)
IP characteristics	NO	NO	YES	NO	NO	YES	NO	NO	YES
Technology FE	NO	NO	YES	NO	NO	YES	NO	NO	YES
IP type FE	YES	YES	YES	YES	YES	YES	NA	NA	NA
Time FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Pseudo R2	0.109	0.123	0.191	0.096	0.104	0.139	0.132	0.167	0.335
Number obs.	349	349	349	552	552	552	123	123	123

Notes: Probit regression. Marginal effects reported. Dependant variable equal to one if case settled. All regressions include a constant. Time period is 2007-2013; sample in columns (1)-(3) consists only of cases with SME plaintiff; sample in columns (4)-(9) contains only cases involving at least one SME as either plaintiff or defendant or both; PHC data contain only patent cases; IPEC trade mark cases include passing-off claims; IPEC design cases include registered and unregistered design rights. Sample excludes cases brought by performance rights organisation PPL (Phonographic Performance Limited). IP type FE: dummy variable for each type of IP right (patent, trade mark, copyright, registered design, database). IP characteristics not reported include: patents – patent and non-patent backward citations, forward citations (in first 3 years), number of International Patent Classification (IPC) subclasses, patent family size, and a dummy variable equal to one if EP patent; trade marks – dummy variables equal to one if registered community, U.K., or Madrid (WIPO) trade mark filing litigated, omitted category is unregistered trade mark/passing off; design rights – dummy variables equal to one if registered community or U.K. design right litigated, omitted category is unregistered design. Regressions include a dummy variable equal to one if the case value is missing and a dummy variable equal to one if no patent information is available for a patent case. Technology effects for patent cases include indicators for each main technology area (electrical engineering, instruments, chemistry, mechanical engineering, other). Time FE by year in columns (1)-(3) and quarter in columns (4)-(9). Robust standard errors clustered at the case-level. * significant at 10%, ** at 5%, *** at 1%.

results are very similar to those shown in Table 4 and in fact suggest that we might have underestimated the negative effect of the shift from the English towards the American rule on settlements.

6 Conclusion

This paper contributes to the theoretical and empirical literature on the effect of fee shifting in civil litigation. We first develop a theoretical model to analyze the effect that fee shifting rules have on plaintiffs' decisions to file suit. Our analysis expands on the seminal litigation model by Bebchuk (1984) in three respects. First, rather than modeling the decisionmaking process of a single plaintiff, we model the effect of fee shifting rules on a set of heterogeneous potential plaintiffs. Second, our model generates predictions regarding the observable post-filing settlement rate rather than the (typically) unobservable pre-trial settlement rate. Third, rather than studying just the American and English rules, we study a series of cost recovery rules, including a regime that places a cap on the amount of costs that a party may recover. Importantly, our analysis reveals a new indirect effect not included in prior models: the effect that a change in cost recovery rules has, not just on individual plaintiffs, but also indirectly on the set of plaintiffs. Taking these novel considerations into account, our model suggests that the net effect of a costs cap on the incentives to file a case and the settlement rate are ambiguous.

Next, relying on a recent reform of rules for awarding fees in IP suits brought in the U.K. we present an empirical analysis of the effect of fee shifting. Our analysis takes advantage of the introduction of a cap on the amount of costs recoverable in suits litigated in the U.K.'s Patents County Court. We study a set of more than 2,000 IP cases filed between 2007 and 2013 at the PHC which does not employ a costs cap. Our findings, which use data from the PHC to control for unobservable time-varying factors, suggest that the introduction of a costs cap at the IPEC increased the number of suits filed in that court but decreased the settlement rate.

In addition to underscoring the need for further theoretical and empirical research in this area, our findings are directly relevant to a number of legal developments unfolding across the globe. In the U.S. policymakers have on several occasions in recent years considered legislation that would make two-way fee awards routine in patent suits. In addition, U.S. policymakers have recently considered establishing one or more venues modeled after the IPEC for litigating relatively small patent and copyright claims. Finally, despite being home to the American Rule, the U.S. legal system has already adopted a variety of fee shifting rules applicable in certain jurisdictions or in cases enforcing certain statutory or constitutional rights. Important civil litigation reforms are underway in Europe as well, particularly in the arena of IP enforcement. Europe stands on the precipice of establishing a Unified Patent Court that would drastically decrease the cost of enforcing patent rights across the continent and, moreover, place caps on the recovery of litigation expenses much like current practice in the IPEC. Our findings suggest that the use of costs caps in a European Unified Patent Court may well increase the overall rate of patent litigation, but in the process may open the courthouse door for many SMEs that previously found patent assertion prohibitively costly.

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A Appendix: Legal background

A number of key aspects of the procedures of the IPEC and the PHC/HC are described here in order to give more information about the legal background of the reforms:

Appellate Structure: Where permission is granted, appeals from the PHC/HC are heard at the Court of Appeal, where the costs of litigation can easily reach the same level as the PHC/HC. Meanwhile, depending on the nature of the order being appealed, the destination of an appeal from the multi-track of the IPEC is either the Court of Appeal or the PHC/HC - final orders are appealed to the Court of Appeal whereas interim orders are appealed to the PHC/HC ([HMCTS, The Intellectual Property Enterprise Court Guide, July 2016](#)). IP case appeals from the IPEC to the Court of Appeal are rare due to the cost involved (if parties have chosen the IPEC due to its limited costs structure, they are rarely willing to spend hundreds of thousands of pounds appealing the initial ruling at the Court of Appeal). Moreover, appeals are much more likely in complex cases i.e. cases suited to the PHC/HC, not the IPEC. Finally, the destination of an appeal from a decision on the IPEC small claims track is to the IPEC multi-track judge.

Disclosure: Within the PHC/HC there is a wide-ranging disclosure requirement under the Civil Procedure Rules parts 31-35, which is on-going throughout the duration of the case, and gives parties the ability to inspect documents belonging to the other side, perform experiments, call expert witnesses and to engage in extensive cross-examination. These requirements were present at the pre-reform PCC as well - however, post-reforms, in line with the active case management (ACM) that now takes place at the IPEC – which includes the limiting of claims/submissions – both the requirement of disclosure and the use of expert evidence are now much more limited at the IPEC level than at the PHC/HC level. Interestingly, in October 2015 the PHC began a two-year trial run of a ‘Shorter Trial Scheme’ which allows for disclosure and submissions to be limited along the lines of IPEC trials ([Practice Direction 51N – Shorter and Flexible Trials Pilot Schemes](#)). It is too early to assess the success, or not, of this trial, which falls outside of the period of our study.

Remedies: All the remedies available in the PHC/HC are available in the IPEC multi-track including preliminary and final injunctions, damages, accounts of profits, delivery up, disclosure, search and seizure and asset freezing. In other words, there are no differences in the remedies each court can award (apart from the damages cap, which restricts the level of damages available at the IPEC). However, the remedies available in the IPEC small claims track are more limited - it has the power to order final injunctions, and final damage awards, but it does not have the power to issue preliminary injunctions, search and seizure orders or asset freezing orders.

Cost allocation: In England and Wales the substantive legal issues and the issues of costs and damages are dealt with separately, and the losing party will typically bear the brunt of the costs of the case on an issue-cost basis – the so-called ‘loser-pays rule’ (McDonagh and Helmers, 2013a). This issue-based approach works such that each party will have to pay the costs of the issues he/she lost at trial. For instance, if a patent infringement trial concludes with a two-part ruling that (i) the

claimant's patent was invalid and (ii) the defendant's activities would have infringed the claimant's patent if it had been valid, the claimant would have to pay the costs of the part of the trial dedicated to the validity issue, and the defendant would have to pay the costs of the part of the trial dedicated to the infringement issue.

Legal representation: At the IPEC and the PHC/HC litigants may be represented before courts by appropriately qualified and certified barristers, solicitors, patent attorneys and trade mark attorneys.³² Legal representation is not required at the IPEC small claims track level, though parties are free to obtain it if they wish.

B Appendix: Summary of legal changes

The following description shows the range of rights that could be litigated at the PCC prior to September 2013 and at the IPEC post 1 October 2013. It is notable that prior to the reconstitution of the PCC as the IPEC in October 2013 the court's ability to hear certain matters was restricted in comparison with the list of matters that could be heard at the PHC/HC during the same period. For example, its jurisdiction to hear patent matters (special) was different in form than its power to hear copyright matters (ordinary). This distinction restricted to some extent the types of remedies - such as asset freezing orders and orders for search and seizure - that were available in different types of cases (it depended on the type of jurisdiction the case fell into). One of the main reasons to highlight the information below is to emphasize that the PCC was not merely 're-named' as the IPEC - the court was completely reconstituted in a manner that allows it to share jurisdiction with the PHC/HC in virtually all IP matters, as shown below.

- 1 Jan 2007-30 September 2013 - PCC Jurisdiction (County Court with split jurisdiction):
 - Patents (special jurisdiction)
 - Registered designs (U.K. and Community) (special jurisdiction)
 - Copyright (ordinary jurisdiction)
 - Trade marks and Passing Off (U.K. and Community) (ordinary jurisdiction- though with restrictions on invalidity actions with respect to CTMs)
 - Unregistered designs (U.K. and Community) (ordinary jurisdiction)
 - Databases (sui generis and Copyright)
 - Ancilliary matters such as Breach of Confidence - only where linked to claim within special or ordinary jurisdiction)
- 1 Oct 2013-31 December 2013 - IPEC Jurisdiction (Specialist Court within Chancery Division)
 - Patents
 - Registered designs (U.K. and Community)

³²See [Right to Conduct Litigation and Rights of Audience 2012](#).

- Plant Variety rights and Semiconductor Topography rights
 - Copyright
 - Trade marks and Passing Off (U.K. and Community - though with restrictions on invalidity actions with respect to CTMs)
 - Unregistered designs (U.K. and Community)
 - Databases (sui generis and Copyright)
 - Breach of Confidence
 - Ancillary matters (including breach of contract, breach of fiduciary duty, and malicious falsehood)
- 1 January 2007-31 December 2013 - HC Jurisdiction (Chancery Division)
 - Copyright
 - Trade marks and Passing Off (including Appeals from the Comptroller of Trade Marks) (U.K. and Community - though restrictions on invalidity actions with respect to CTMs)
 - Unregistered Designs (U.K. and Community)
 - Databases (sui generis and Copyright)
 - Breach of Confidence
 - Ancillary matters (including breach of contract, breach of fiduciary duty, and malicious falsehood)
- 1 January 2007-31 December 2013 - PHC Jurisdiction (Specialist Court within Chancery Division)
 - Patents (including Appeals from the Comptroller of Patents)
 - Registered Designs (U.K. and Community) (except for Appeals from the Comptroller within jurisdiction of Registered Designs Appeal Tribunal)
 - Plant Variety Rights and Semiconductor Topography rights
 - Ancillary matters (including breach of contract, breach of fiduciary duty, and malicious falsehood)

C Appendix: Model

Proof of Lemma 2

This result follows from the fact that $\Pi^*(D, R_p, R_d)$ is continuous and increasing in D . The continuity follows from the differentiability of $F(\cdot)$ and $f(\cdot)$. The monotonicity is established below.

Since

$$\Pi^*(D, R_p, R_d) \equiv \hat{\Pi}(D, R_p, R_d, S^*(D, R_p, R_d))$$

then, by the Envelope Theorem,

$$\frac{\partial \Pi^*}{\partial D}(D, R_p, R_d) = \frac{\partial \hat{\Pi}}{\partial D}(D, R_p, R_d, S^*(D, R_p, R_d))$$

Therefore, using the expression of $\hat{\Pi}$ and the fact that $\hat{p}(D, R_p, R_d, S^*(D, R_p, R_d)) = p^*(D, R_p, R_d)$ we get

$$\begin{aligned} \frac{\partial \Pi^*}{\partial D}(D, R_p, R_d) &= -f(p^*) \frac{\partial \hat{p}}{\partial D}(S^*(D, R_p, R_d) + C_p + R_d) + \int_{\underline{p}}^{p^*} pf(p)dp + (D + R_p + R_d) \frac{\partial \hat{p}}{\partial D} p^* f(p^*) \\ &= -f(p^*) \frac{\partial \hat{p}}{\partial D} [S^*(D, R_p, R_d) + C_p + R_d - p^*(D + R_p + R_d)] + \int_{\underline{p}}^{p^*} pf(p)dp \end{aligned}$$

From

$$S^*(D, R_p, R_d) = p^*(D + R_p + R_d) + C_d - R_d$$

it then follows that

$$\frac{\partial \Pi^*}{\partial D}(D, R_p, R_d) = -f(p^*) \frac{\partial \hat{p}}{\partial D} (C_d + C_p) + \int_{\underline{p}}^{p^*} pf(p)dp > 0$$

Proof of Proposition 1

Let us first consider the effect of R_p on the equilibrium mass of claims filed. Since

$$\frac{\partial (1 - G(D^*(R_p, R_d)))D^*}{\partial R_p} = -g(D^*(R_p, R_d)) \frac{\partial D^*}{\partial R_p} = g(D^*(R_p, R_d)) \frac{\frac{\partial \Pi^*}{\partial R_p}}{\frac{\partial \Pi^*}{\partial D}}$$

and

$$\frac{\partial \Pi^*}{\partial D} > 0$$

the sign of $\frac{\partial (1 - G(D^*(R_p, R_d)))D^*}{\partial R_p}$ is the same as the sign of $\frac{\partial \Pi^*}{\partial R_p}$. Using the Envelope Theorem,

$$\frac{\partial \Pi^*}{\partial R_p}(D, R_p, R_d) = \frac{\partial \hat{\Pi}}{\partial R_p}(D, R_p, R_d, S^*(D, R_p, R_d))$$

which implies that

$$\begin{aligned} \frac{\partial \Pi^*}{\partial R_p}(D, R_p, R_d) &= -f(p^*) \frac{\partial \hat{p}}{\partial R_p}(S^*(D, R_p, R_d) + C_p + R_d - p^*(D + R_p + R_d)) + \int_{\underline{p}}^{p^*} pf(p)dp \\ &= -f(p^*) \frac{\partial \hat{p}}{\partial R_p} (C_d + C_p) + \int_{\underline{p}}^{p^*} pf(p)dp > 0 \end{aligned}$$

Therefore, the equilibrium mass of claims filed increases with R_p .

Let us now consider the effect of R_d on the equilibrium mass of claims filed. Similarly, the sign of $\frac{\partial(1-G(D^*(R_p, R_d)))D^*}{\partial R_d}$ is the same as the sign of $\frac{\partial \Pi^*}{\partial R_d}$. Using the Envelope Theorem,

$$\begin{aligned}\frac{\partial \Pi^*}{\partial R_d}(D, R_p, R_d) &= \frac{\partial \hat{\Pi}}{\partial R_d}(D, R_p, R_d, S^*(D, R_p, R_d)) \\ &= -f(p^*) \frac{\partial \hat{p}}{\partial R_p} (S^*(D, R_p, R_d) + C_p + R_d - p^*(D + R_p + R_d)) - F(p^*) + \int_{\underline{p}}^{p^*} pf(p)dp \\ &= -f(p^*) \frac{\partial \hat{p}}{\partial R_p} (C_d + C_p) - F(p^*) + \int_{\underline{p}}^{p^*} pf(p)dp\end{aligned}$$

Integrating by parts and using the fact that $F(\underline{p}) = 0$ we get

$$\int_{\underline{p}}^{p^*} pf(p)dp = p^*F(p^*) - \int_{\underline{p}}^{p^*} F(p)dp.$$

Therefore,

$$\frac{\partial \Pi^*}{\partial R_d}(D, R_p, R_d) = -f(p^*) \frac{\partial \hat{p}}{\partial R_p} (C_d + C_p) - (1 - p^*)F(p^*) - \int_{\underline{p}}^{p^*} F(p)dp$$

Moreover, at $S = S^*(D, R_p, R_d)$

$$\begin{aligned}\frac{\partial \hat{p}}{\partial R_p} &= \frac{D + R_p + C_d - S^*(D, R_p, R_d)}{(D + R_p + R_d)^2} \\ &= \frac{(1 - p^*)(D + R_p + R_d)}{(D + R_p + R_d)^2} > 0\end{aligned}$$

Therefore, we can conclude that

$$\frac{\partial \Pi^*}{\partial R_d}(D, R_p, R_d) < 0$$

that is, the equilibrium mass of claims filed decreases with R_d .

Proof of Lemma 3

From expression (3) and the assumption that the hazard rate $\frac{f}{1-F}$ is increasing it follows that $p^*(D, R_p, R_d)$ increases in R_p , R_d and D . Therefore, $1 - F(p^*(D, R_p, R_d))$ decreases with R_p , R_d and D .

D Appendix: Data

D.1 IPEC 2007-2013

We collected information on all IP cases filed at the IPEC for the entire period 2007-13. In order to do this, we first compiled the physical IPEC court records/files and associated information for all cases filed 2007-13; secondly, we used a set of specially devised IP right-specific spreadsheets to extract and organize the relevant information gathered from these often extremely detailed and complex records; thirdly, we compiled the different files into a single database. Nonetheless, because the record keeping at the IPEC is largely paper-based, it is not uncommon for case files to be misfiled, or to go missing altogether. For this reason there are a very small number of cases for which we were unable to obtain any information except for the case number. Nonetheless, we are confident that we have examined every possible physical IPEC case file for 2007-13. To double check, in September 2014 we examined the available IPEC judgments for 2007-13 online (via BAILII); we did not find any cases that we did not already have a record of from our search of the physical files.

For IPEC cases, the information that we collected on IP cases filed 2007-13 contains detailed information on the start date of the case, the initial and counter claims (infringement, revocation etc.), the names of the litigating parties, information on the relevant IP right (including patent numbers, trade mark numbers etc.), and the outcomes of the cases. We also gathered information on whether cases were transferred from the IPEC to the PHC or vice versa. These data were collected during the period September 2013-July 2014 and these spreadsheets are up to date in terms of outcomes (decided cases, settlements etc.) up to July 2014.

D.2 PHC

We collected the same set of information on patent cases at the PHC as for the IPEC for the entire 2007-2013 period. For all other IP rights (trade mark, design, copyright, and database related disputes), we collected only the following streamlined data for all PHC cases filed 2009-2013:

- Case numbers;
- Parties to the claim;
- Initial claim(s);
- Type of IP right(s) litigated – noting differences within IP rights where relevant – for instance, whether the right was a Community TM, or a U.K. TM (registered or unregistered), or a U.K. or Community unregistered/registered design right.

Similar to the IPEC data collection, we undertook a number of checks to ensure the completeness of the patent data:

- For the years 2011 and 2012, we were able to cross-reference patent cases via a list that the law firm Powell-Gilbert had provided us of case file numbers drawn from a physical search of files they had undertaken during early 2013.

- We used the Patents Court Diary in order to cross-reference the listed cases with what we found in the physical records to ensure no cases were missed.
- We liaised with HMCTS regarding their published records for the amount of PHC cases filed per year. However, on completion of the search what we found was that the published HMCTS statistics are not an accurate reflection of the amount of cases actually filed per year.
- As with the IPEC, from September-October 2014 we examined the available PHC patent judgments for 2007-13 online (via BAILII). Thus, as with the IPEC, while there are a very small number of patent PHC cases for which we are missing data, we are confident that our PHC dataset comprehensively includes all available physical and online records.

E Appendix: Variable Description

This appendix describes the construction of the variables used in our analysis.

- **Dependent variables**

- *Settlement*: the outcome of a case is coded as settlement if the court does not hand down a decision. Settlements include court settlements as well as out-of-court settlements.

- **Case characteristics**

- *Case transferred*: the variable is equal to one if a case was transferred to the PCC/IPEC from another court or cases were transferred between the PCC/IPEC and the PHC/HC.
- *Case value*: the litigating parties specify the value of the case on the claim form.
- *Infringement claim*: the variable is equal to one if the plaintiff alleges infringement of the IP right.
- *Invalidity claim*: the variable is equal to one if the plaintiff alleges that the IP right is invalid.

- **Litigant characteristics**

- *Size*: we categorized companies according to the EU definition into four size categories using a combination of the number of employees, turnover, and total assets. If several companies from the same business group appeared as co-plaintiffs or co-defendants, we allocated the entire business group into the size category of its largest member.
- *Residence*: we identified a company's origin using information available in the court records, Bureau van Dijk's FAME and Amadeus databases, as well as web searches. We then allocated companies into three categories: domestic (U.K.), Europe, and rest of the world.

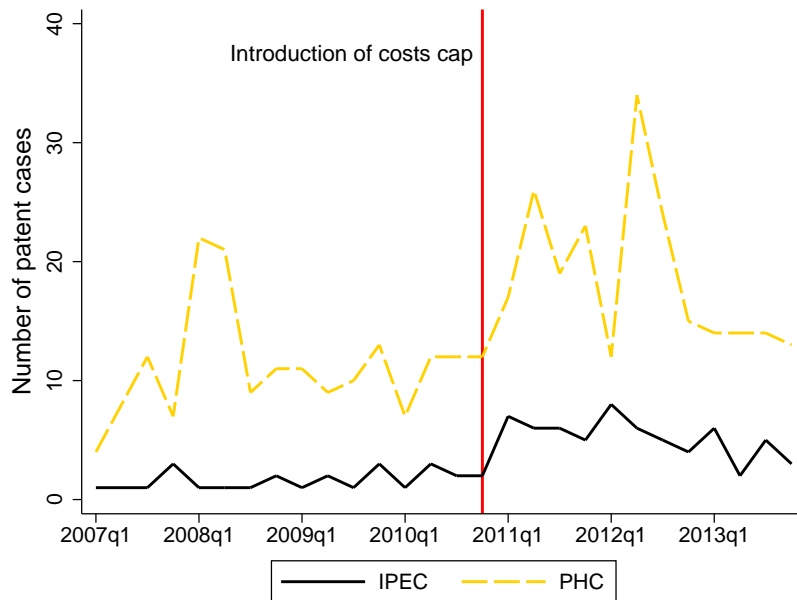
- *Non-practicing entity (NPE)*: we identified NPEs by identifying the patent holder in each case and we then determined manually, using web searches, news reports, court filings, and the existing academic literature on NPEs and PAEs whether a patent holder was an NPE at the time of the court case. For more details see Love et al. (2016).

- **IP characteristics**

- *Forward citations (in first 3 years)*: we counted the number of patents citing the focal patent within the first three years after the earliest publication.
- *Backward citations (patents)*: we counted a patent's number of citations to other patents.
- *Backward citations (non-patent)*: we counted a patent's number of citations to non-patent literature.
- *IPC subclasses count*: we counted the number of unique IPC subclasses of the patent.
- *Family size (DOCDB)*: we counted the number of patents that belong to the same family (according to the DOCDB definition) of the patent.
- *EP patent*: we created a binary variable that indicates whether a patent is a European patent (EP).
- *Registered Community Design*: we created a binary variable that indicates whether a registered design right is a community design registered with the EU IPO.
- *Registered U.K. Design*: we created a binary variable that indicates whether a registered design right is a U.K. design registered with the U.K. IPO.
- *Registered Community Trademark*: we created a binary variable that indicates whether a registered trade mark right is a community trade mark registered with the EU IPO.
- *Registered UK Trademark*: we created a binary variable that indicates whether a registered trade mark right is a U.K. trade mark registered with the U.K. IPO.
- *Madrid Trademark*: we created a binary variable that indicates whether a registered trade mark right was filed via WIPO (the Madrid system).

F Appendix: Figures

Figure A-1: Comparison IPEC/PHC: patent cases



Note: Figure shows only cases where parties are companies.

Figure A-2: Case transfers: cases brought by SME plaintiffs by quarter

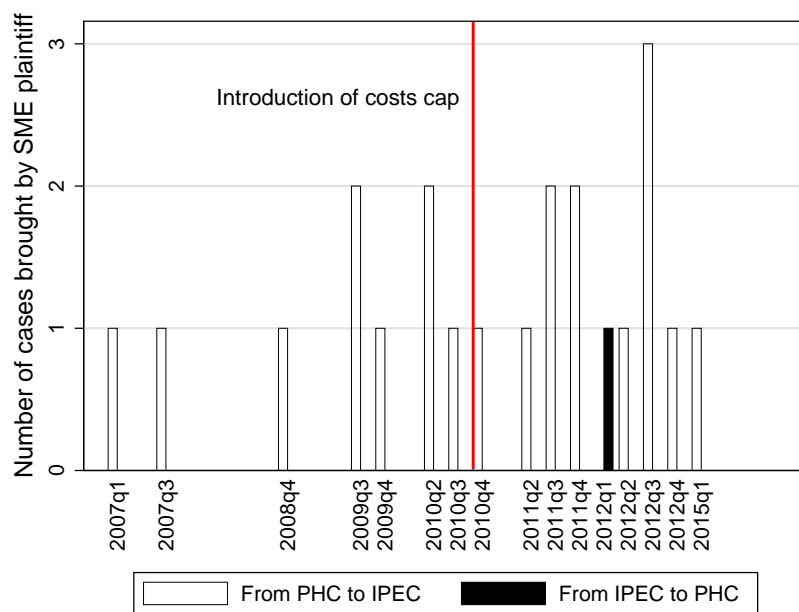
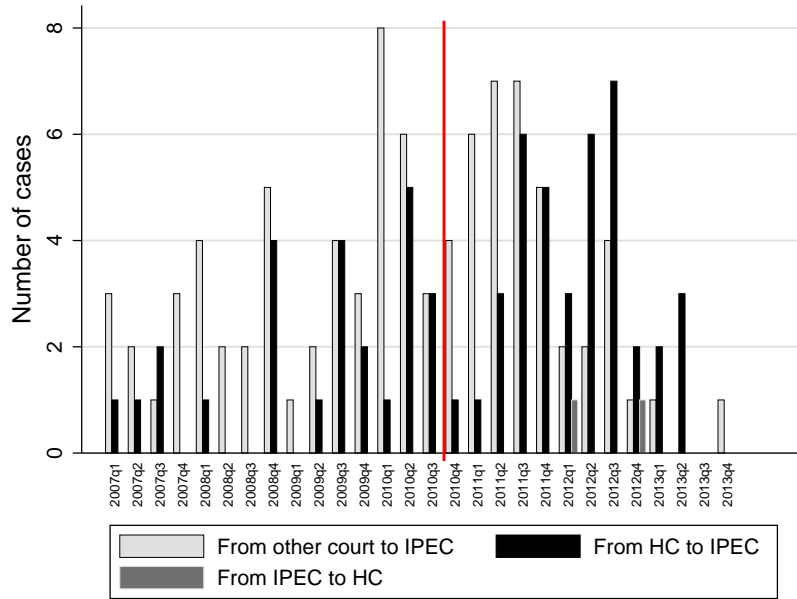
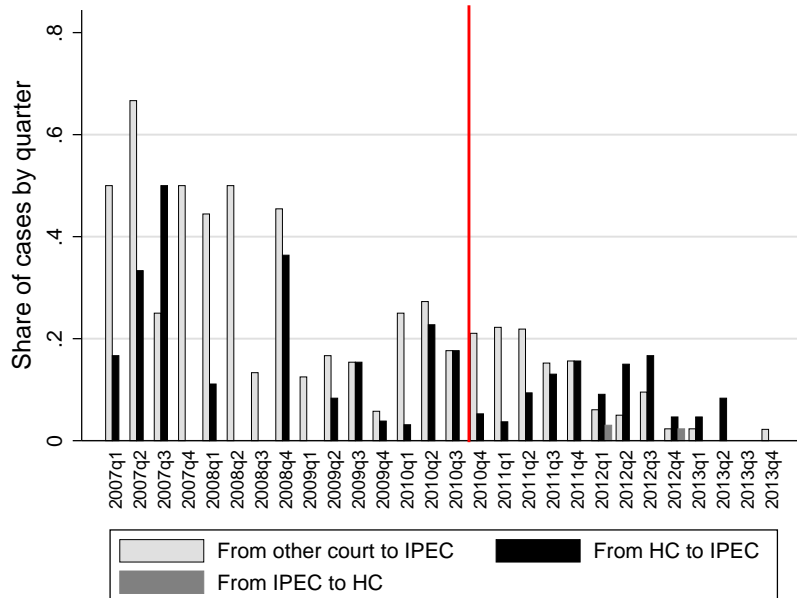


Figure A-3: Case transfers: case counts by quarter (all cases)



Note: Other courts are county courts where claims (but not patents or registered designs) may be initially filed.

Figure A-4: Case transfers: share of transferred cases in total number of cases by quarter (all cases)



Note: Other courts are county courts where claims (but not patents or registered designs) may be initially filed.

G Appendix: Tables

Table A-1: IPEC and PHC: Descriptive statistics – only cases with SME plaintiffs, 2007-2013

	Mean	Std. Dev.	Min. Max.	Obs.	
All IP cases					
Settled	0.647	0.478	0	1	349
<i>Case characteristics</i>					
Case transferred	0.177	0.382	0	1	349
In case value	5.054	5.330	0	13.815	349
Infringement claim	0.899	0.300	0	1	349
Invalidity claim	0.057	0.232	0	1	349
<i>Litigant characteristics</i>					
Defendant SME	0.595	0.491	0	1	349
Plaintiff Europe	0.017	0.130	0	1	349
Plaintiff World	0.031	0.174	0	1	349
Defendant Europe	0.042	0.203	0	1	349
Defendant World	0.048	0.215	0	1	349
NPE	0.008	0.092	0	1	349
<i>IP characteristics</i>					
Patent family	2.690	6.849	0	49	349
Forward citation count (3 years)	0.269	1.143	0	11	349
Backward citation count	1.005	2.495	0	17	349
Non-patent backward citation count	0.260	1.790	0	25	349
IPC subclass count	0.469	1.128	0	12	349
EP patent	0.134	0.341	0	1	349
Registered Community Design	0.040	0.196	0	1	349
Registered U.K. Design	0.048	0.215	0	1	349
Registered Community Trademark	0.065	0.248	0	1	349
Registered U.K. Trademark	0.234	0.424	0	1	349
Madrid Trademark	0.000	0.000	0	0	349

Table A-2: IPEC and PHC: Descriptive statistics – only cases involving SMEs, 2007-2013

	Mean	Std. Dev.	Min.	Max.	Obs.
All IP cases					
Settled	0.701	0.458	0	1	552
<i>Case characteristics</i>					
Case transferred	0.190	0.392	0	1	552
In case value	4.940	5.341	0	14,508	552
Infringement claim	0.920	0.271	0	1	552
Invalidity claim	0.045	0.208	0	1	552
<i>Litigant characteristics</i>					
Plaintiff SME	0.632	0.482	0	1	552
Defendant SME	0.744	0.436	0	1	552
Plaintiff Europe	0.086	0.282	0	1	552
Plaintiff World	0.108	0.311	0	1	552
Defendant Europe	0.038	0.191	0	1	552
Defendant World	0.038	0.191	0	1	552
NPE	0.012	0.111	0	1	552
<i>IP characteristics</i>					
Patent family	4.485	12.557	0	136	552
Forward citation count (3 years)	0.713	3.055	0	37	552
Backward citation count	1.188	2.815	0	17	552
Non-patent backward citation count	0.318	1.783	0	25	552
IPC subclass count	0.706	1.978	0	20	552
EP patent	0.181	0.385	0	1	552
Registered Community Design	0.043	0.204	0	1	552
Registered U.K. Design	0.034	0.182	0	1	552
Registered Community Trademark	0.103	0.304	0	1	552
Registered U.K. Trademark	0.211	0.409	0	1	552
Madrid Trademark	0.005	0.073	0	1	552
Patents					
Settled	0.723	0.449	0	1	123
<i>Case characteristics</i>					
Case transferred	0.081	0.274	0	1	123
In case value	3.149	5.169	0	13,815	123
Infringement claim	0.772	0.421	0	1	123
Invalidity claim	0.105	0.308	0	1	123
<i>Litigant characteristics</i>					
Plaintiff SME	0.593	0.493	0	1	123
Defendant SME	0.788	0.409	0	1	123
Plaintiff Europe	0.195	0.397	0	1	123
Plaintiff World	0.170	0.377	0	1	123
Defendant Europe	0.113	0.318	0	1	123
Defendant World	0.130	0.337	0	1	123
NPE	0.040	0.198	0	1	123
<i>Patent characteristics</i>					
Patent family	16.097	19.035	0	136	123
Forward citation count (3 years)	3.048	5.889	0	37	123
Backward citation count	4.227	4.201	0	17	123
Non-patent backward citation count	1.308	3.592	0	25	123
IPC subclass count	2.560	3.097	0	20	123
EP patent	0.642	0.481	0	1	123

Table A-3: IPEC and PHC: settlement decision by quarter – only cases involving SMEs, 2007-2012

	SME Plaintiff			All SME					
	All IP			All IP			Patents		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Costs cap</i>									
IPEC	-0.093 (0.125)	-0.075 (0.133)	-0.172 (0.130)	-0.061 (0.100)	-0.035 (0.107)	-0.048 (0.111)	-0.007 (0.153)	0.072 (0.135)	0.096 (0.071)
Postreform	0.154 (0.280)	0.227 (0.297)	0.734 (0.235)*	-0.850*** (0.083)	-0.930*** (0.043)	-0.841*** (0.135)	-0.040 (0.252)	0.578* (0.266)	0.214 (0.301)
IPEC×Postreform	-0.379 (0.217)	-0.457* (0.223)	-0.785*** (0.134)	-0.198 (0.131)	-0.291** (0.132)	-0.497*** (0.138)	-0.548** (0.218)	-0.735*** (0.179)	-0.989*** (0.021)
<i>Case characteristics</i>									
Case transferred	0.013 (0.078)	0.027 (0.079)	0.033 (0.077)	0.045 (0.056)	0.054 (0.056)	0.053 (0.055)	0.083 (0.129)	0.119 (0.109)	0.054 (0.038)
In case value	0.075* (0.040)	0.079* (0.041)	0.058 (0.040)	0.019 (0.026)	0.026 (0.027)	0.017 (0.027)	0.140** (0.065)	0.166** (0.062)	0.070** (0.041)
Infringement claim		0.058 (0.152)	0.178 (0.203)		-0.115 (0.088)	-0.064 (0.100)			0.065 (0.137)
Invalidity claim		0.101 (0.142)	0.137 (0.149)		0.001 (0.124)	0.057 (0.120)			-0.026 (0.123)
<i>Litigant characteristics</i>									
Plaintiff SME				-0.126** (0.052)	-0.127** (0.056)	-0.146** (0.057)	0.068 (0.114)	0.111 (0.125)	0.243** (0.124)
Defendant SME	0.142** (0.065)	0.151** (0.069)	0.153** (0.072)	0.125** (0.063)	0.126** (0.066)	0.123* (0.066)	0.001 (0.113)	0.012 (0.146)	0.127 (0.129)
Plaintiff Europe		-0.046 (0.246)	-0.135 (0.274)		-0.092 (0.106)	-0.205* (0.127)		0.087 (0.105)	-0.138 (0.158)
Plaintiff World		0.067 (0.176)	0.244 (0.093)		0.126 (0.069)	0.125 (0.074)		0.180 (0.080)	0.091* (0.038)
Defendant Europe		-0.076 (0.186)	0.112 (0.169)		-0.244* (0.154)	-0.204 (0.172)		-0.205 (0.163)	-0.102 (0.139)
Defendant World		0.178 (0.127)	0.214 (0.116)		0.072 (0.114)	0.121 (0.099)		-0.132 (0.091)	0.077* (0.032)
NPE		-0.554** (0.136)	-0.679*** (0.052)		-0.077 (0.181)	-0.219 (0.265)		-0.279 (0.238)	-0.806*** (0.211)
IP characteristics	NO	NO	YES	NO	NO	YES	NO	NO	YES
Technology FE	NO	NO	YES	NO	NO	YES	NO	NO	YES
IP type FE	YES	YES	YES	YES	YES	YES	NA	NA	NA
Quarter FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Pseudo R2	0.110	0.123	0.206	0.114	0.131	0.186	0.158	0.223	0.395
Number obs.	291	291	291	455	455	455	119	119	119

Notes: Probit regression. Marginal effects reported. Dependant variable equal to one if case settled. All regressions include a constant. Time period is 2007-2012; sample in columns (1)-(3) consists only of cases with SME plaintiff; sample in columns (4)-(9) contains only cases involving at least one SME as either plaintiff or defendant or both; PHC data contain only patent cases; IPEC trade mark cases include passing-off claims; IPEC design cases include registered and unregistered design rights. Sample excludes cases brought by performance rights organisation PPL (Phonographic Performance Limited). IP type FE: dummy variable for each type of IP right (patent, trade mark, copyright, registered design, database). IP characteristics not reported include: patents – patent and non-patent backward citations, forward citations (in first 3 years), number of International Patent Classification (IPC) subclasses, patent family size, and a dummy variable equal to one if EP patent; trade marks – dummy variables equal to one if registered community, U.K., or Madrid (WIPO) trade mark filing litigated, omitted category is unregistered trade mark/passing off; design rights – dummy variables equal to one if registered community or U.K. design right litigated, omitted category is unregistered design. Regressions include a dummy variable equal to one if the case value is missing and a dummy variable equal to one if no patent information is available for a patent case. Technology effects for patent cases include indicators for each main technology area (electrical engineering, instruments, chemistry, mechanical engineering, other). Time FE by year in columns (1)-(3) and quarter in columns (4)-(9). Robust standard errors clustered at the case-level. * significant at 10%, ** at 5%, *** at 1%.