Social Optimality of Alternative Fees for Lawyers

by

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Abstract: Contingent fees are a regular feature of litigation in many jurisdictions however the question remains whether they bring benefits to the individuals of the legal system and the administration of justice. Australia has introduced a variation of this fee structure called conditional fees. This paper develops a theoretical approach in finding the optimal contractual arrangement between a lawyer and her client and compares the three common fee structures - hourly, contingent and conditional to such benchmark. The key issue is whether any of these three fee structures cause excessive litigation and their implications for social welfare. We find the optimal contract depends on the allocation of information asymmetry and the right to offer the contract. In the case where the offeror has the private information, the hourly and conditional fees render the optimal contract. In the case where the acceptor has the private information, contingent fees tend to perform better. However, all three fee structures result in litigation which is short of the socially desirable amount, thus the claim of excessive limitation is unjustified.

\[1\text{Economics, The University of Sydney, Sydney NSW 2006, Australia.}\]

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1 Introduction

The conflicting interests that exist in the contractual relationship between a lawyer and her client has been a continued subject of debate. Many academics have argued that this issue is merely an extension of the principal and agent problem. The standard hourly fees provide little incentive for the lawyers to work hard and win the matter for her client. As a result, many jurisdictions have introduced the use of contingent fees to replace the traditional hourly fees on the argument that it improves access to justice and aligns the lawyer’s interest with the client. However, in Australia, only conditional fees are allowed.

A contingent fee is a form of performance related payment where the lawyer receives a percentage of the court award in the event of a successful suit. This is most commonly used in the United States. Contingent fees are banned in Australia\(^2\), however, since the mid-1990s, several states\(^3\) have introduced a modified version called conditional fees whereby the lawyer is allowed to charge up to a 25% premium on the normal hourly fees in the event of winning. Under both contingent and conditional fees, the lawyer receives no remuneration if the suit is unsuccessful. The main difference between the two fee arrangements is that contingent contract rewards a percentage of the compensation whereas conditional contract pays an uplift amount unrelated to the adjudicated amount. We expect the incentive for lawyers to be different under these two schemes and to that of the standard hourly contract.

Despite the popularity of contingent and conditional fees, many critics argue that such fees promote excessive litigation. In contrast to this belief, we argue the amount of litigation depends on the post-accident game between the lawyer and her client as well as the pre-accident prevention. Although contingent fees may reduce the financial burdens of a client bringing the case to a lawyer, the lawyer now faces greater risk of being unpaid in the event of losing. As a result, they may perform a better role in filtering out the frivolous cases. Furthermore, a greater number of suits filed in court increases the liability of injurers and consequently results in higher deterrence of future accidents. In aggregate, these effects may lead to less litigation than hourly fees. Nonetheless, we argue neither form of fees (contingent, conditional or hourly) bring too much litigation from a social perspective as a social planner would desire more litigation to increase the care taken by the injurers.

This paper explores which contractual form induces a lawyer to provide the most efficient level of effort and as a consequence determines which of the three fee structure is optimal. The remainder of this paper is structured as follows. In Section 2, we provide a general overview of the existing literature and their limitations. Section 3 outlines the model of litigation where the contract between the lawyer and her client is determined. In this section, we examine four possible combinations of assigning one party with asymmetric information and/or the right to offer the contract. Section 4 examines the model of accident prevention given the deterrence effect of litigation. Section 5 explores the social effects of litigation and the optimal social outcomes under different scenarios. Finally, section 6 discusses the limitations and extensions of the current models.

\(^2\)Originated from common law crimes of maintenance and champerty.

\(^3\)NSW in 1994 pursuant to the amendment of the *Legal Profession Act 1987* (NSW); South Australia in 1993 pursuant to amendment of the *Legal Practitioners Act 1981* (SA)
2 Literature Review

The assertion of excessive litigation is often raised by legal commentators, however, there has been little theoretical or empirical support in the economic literature. The use of conditional fees is relatively new to our legal system, which provides a possible explanation for the lack of focus in the Australian literature. The American contingent system, on the other hand, has been operating since 1975 and there is a considerable amount of literature examining the benefits and criticisms of this system and comparing it to the hourly fees. Nonetheless, there is only a narrow body of literature that compares conditional to contingent and hourly fees. We are not aware of any literature at the present time which draws a comparison between all three fee structures on the amount of litigation and their social efficiency. For this reason, it is useful to consider the literature on the American system first before shifting our focus to the Australian judicial environment.

2.1 The American contingent system

The traditional view of "excessive litigation" was supported by Danzon (1983). In this paper, she shows that under certain conditions contingent fees can encourage more litigation relative to that which would occur under a hourly fees regime. However, her model focuses on the effect of alternative fee arrangements on the lawyer’s effort, ignoring any impact on the injurer’s incentives to take care in avoiding accidents. Further, the socially optimal amount of litigation is not examined ignoring the possibility that both fee arrangements produce too little litigation from the social perspective. Miceli and Segerson (1991) recognise the effect of fee arrangements on the incentive to prevent accidents and demonstrate, contrary to Danzon that contingent fees can lead to a smaller number of suits being filed overall. In their paper, they also explore the social efficiency aspect and conclude neither contingent nor hourly fees yield the efficient amount of litigation. In reaching this outcome, the authors adopt a model that is based on the assumption of a fully informed client. This may create a potential problem in the interpretability of results if this condition is not realised. Indeed, it is difficult to see why a lay plaintiff (which is the case in most personal injury claims) would be better informed than his lawyer on the chance of success in court. It is shown in Dana and Spier (1993) that when the lawyer is informed instead of the client, the volume of litigation is ambiguous since in the absence of contingent fees, uninformed plaintiffs might not initiate lawsuits at all. In their paper, they recognise the deterrence effect of litigation however the injurer’s behaviour is not explicitly modelled.

2.2 The Australian conditional system

There has been very few literature exploring the concept of conditional fees in depth. Indeed out of all the contemporary literature examined, none has made an explicit comparison between the volume of litigation under the two different fee systems. Emons and Garoupa (2006) use a principal-agent framework to model the incentives for the lawyers to work hard under both the contingent and conditional fees regime. In their paper, they are able to show contingent fees are economically superior because the lawyer uses her
information about what is at stake more efficiently. Hyde (2006) also compares contingent and conditional fees by addressing litigation expenditures. In this paper, it is shown that the level of expenditure depends on who controls the litigation - the lawyer or the client. Emons (2007) addresses the issue of conditional and contingent fees by examining the situation where the lawyer is uninformed about an aspect of her client’s case. He shows if there is asymmetric information about the merits of the case, only conditional fees are offered. Alternatively, if there is asymmetric information about the risks of the case, only contingent fees are offered. Of the aforementioned papers that explore the concept of asymmetric information, none offers a detailed analysis of the role of asymmetric information on the lawyer’s efforts and consequently the amount of litigation. This paper hopes to fill the lacuna by offering such analysis and extend the comparison of fees arrangements to their social implications.

3 The Model of Litigation

Consider a simple model of litigation under strict liability. A plaintiff has been injured in an accident and he wants to sue the defendant for damages \( V \). Assume the plaintiff must hire a lawyer in order to have access to court and receive compensation. Firstly, nature determines the plaintiff type \( j \), which can be either easy \( E \) or difficult \( D \). There is a probability \( p \) that a plaintiff is type \( E \) and a probability \( 1 - p \) that he is type \( D \). The only difference between the two types of plaintiffs is probability of winning \( q \) in court, in particular, \( q_E(e) > q_D(e) \) for all \( e \) where \( e \) is the lawyer’s effort (number of hours worked on the case). Furthermore, we assume effort increases the probability of winning but at a decreasing rate, i.e. \( q \in [0,1), q(0) = 0, q' > 0, q'' < 0 \). When a case is won, the plaintiff receives \( V \) from the defendant whereas he gets nothing when the case is lost. The amount \( V \) is assumed to be the same for all plaintiffs.

The timing of events is as follows. The client is injured and brings the case to the lawyer. There is a contract (comprising of a fee and a choice of effort \( e \)) between the lawyer and her client. The following four subsections vary in the information structure and who offers the contract. The lawyer’s choice of \( e \) is observed and monitored by the client.\(^5\) If the contract is accepted, then the case proceeds to the relevant court and there is a probability of \( p \) that the case prevails.

3.1 Client has private information and Lawyer offers

Suppose at the time of contract, the client has the private information of his true type and the lawyer offers the contract \((F,e)\) where \( F \) is the fixed fee component. The client then chooses to accept or reject.

The lawyer’s objective function is as follows:

\[^4\text{except } e = 0 \text{ where } q_E(0) = q_D(0) = 0\]

\[^5\text{Several papers such as Emons and Garoupa (2006) examine the case where the effort is not observed by the client. However, there are stringent measures on billing and accounting for professional costs, thus the client is able to observe the lawyer’s effort to a certain extent. The assumption of unobservable effort is used primarily for the moral hazard problem, which is not the focus of this paper.}\]
\[
\max_{F_E, F_D, e_E, e_D} \quad p[F_E - c(e_E)] + (1 - p)[F_D - c(e_D)] \\
\text{s.t.}
\]
\[
q_E(e_E)V - F_E \geq q_E(e_D)V - F_D \quad \text{(IC}_{E,1}\text{)}
\]
\[
q_D(e_D)V - F_D \geq q_D(e_E)V - F_E \quad \text{(IC}_{D,1}\text{)}
\]
\[
q_E(e_E)V - F_E \geq 0 \quad \text{(IR}_{E,1}\text{)}
\]
\[
q_E(e_E)V - F_E \geq 0 \quad \text{(IR}_{D,1}\text{)}
\]

This is a standard screening model. It is easy to show that IR\_E and IC\_D are redundant, and IC\_E and IR\_D must bind at optimal solution.\(^6\)

Using the equality of IC\_E and IR\_D to simplify the objective function, we can obtain:

\[
\max_{e_E, e_D} \quad p[q_E(e_E)V - q_E(e_D)V + q_D(e_D)V - c(e_E)] + (1 - p)[q_D(e_D)V - c(e_D)]
\]

The first-order conditions are:

\[
p[q'_E(e_E)V - c'(e_E)] = 0 \\
q'_E(e_E)V = c'(e_E) \tag{2}
\]

\[
p[-q'_E(e_D)V + q'_D(e_D)V] + (1 - p)[q_D(e_D)V - c'(e_D)] = 0 \\
\frac{[q'_D(e_D) - pq'_E(e_D)]V}{1 - p} = c'(e_D) \tag{3}
\]

Implications:

1. The easy type receives the efficient quantity of effort where the marginal cost equals to the marginal benefit.

2. The difficult type receives strictly less than the "efficient" amount of effort.

   We know efficiency requires \(q'_D(e_D)V = c'(e_D)\), however, from equation (2), \(q'_D(e_D)V - c'(e_D) = p[q'_E(e_D)V - c'(e_D)] > 0\).

3. Equation (3) may not be satisfied, for example, in the case where \(pq'_E(e_D) > q'_D(e_D)\), then \(c'(e_D) < 0\), which implies the optimal effort is where \(e_D = 0\) and the difficult type client is shut out of the market.

4. The easy type has a positive consumer surplus, unless \(e_D = 0\).

5. The difficult type gets 0 consumer surplus.

\(^6\)Proof has not been included for this draft. But it will be included in the final version of the thesis.
3.2 Lawyer has private information and Lawyer offers

Now suppose instead the lawyer is informed and decides to offer the contract. The client then decides to accept or reject.

The profit maximising condition for the lawyer:

$$\max_{F_E, F_D, e_E, e_D} F_j - c(e_j) \text{ for } j = E, D$$

(4)

We can show the lawyer offers a separate contract for each type.

**Easy E client**

Lawyer’s objective function becomes:

$$\max_{F_E, e_E} F_E - c(e_E)$$

(5)

s.t. $$q_E(e_E)V - F_E \geq 0$$

At the optimal contract, the above constraint must bind otherwise the lawyer can increase $F_E$ by a small increment and increase profits.

Using the equality condition, the objective function becomes

$$\max_{e_E} q_E(e_E)V - c(e_E)$$

and taking the first-order condition:

$$q'_E(e_E)V - c'(e_E) = 0$$

$$q_E(\hat{e}_E)V = c'(\hat{e}_E)$$

(6)

**Difficult D client**

Lawyer’s objective function:

$$\max_{F_D, e_D} F_D - c(e_D)$$

(7)

s.t. $$q_D(e_D)V - F_D \geq 0$$

Similarly, we can show the above constraint must bind which gives a first-order condition as follows:

$$q'_D(\hat{e}_D)V = c'(\hat{e}_D)$$

(8)

The next question we need to consider is whether the lawyer can improve his profits by offering the same contract for both clients.
Suppose the lawyer offers \((\tilde{F}_E, \tilde{e}_E)\) to both types, then the client does not receive any updated information on his type and he will only accept iff

\[
p[q_E(\tilde{e}_E) V - \tilde{F}_E] + (1 - p)[q_D(\tilde{e}_E) V - \tilde{F}_E] \geq 0
\]  

(9)

However, \(q_E(\tilde{e}_E) V - \tilde{F}_E = 0\) and \(q_D(\tilde{e}_E) V - \tilde{F}_E \leq 0\), then the above condition is not satisfied and no client will accept the contract.

Suppose the lawyer offers \((\tilde{F}_D, \tilde{e}_D)\), then the client’s acceptance condition

\[
p[q_E(\tilde{e}_D) V - \tilde{F}_D] + (1 - p)[q_D(\tilde{e}_D) V - \tilde{F}_D] \geq 0
\]  

(10)

will always be satisfied since \(q_E(\tilde{e}_D) V - \tilde{F}_D \geq q_D(\tilde{e}_D) V - \tilde{F}_D = 0\). However, this cannot be the optimal contract as the lawyer can improve his profits by increasing \(F_D\) without violating the acceptance constraint.

The lawyer can maximise by choosing another \((F, e)\)

\[
\max_{F, e} F - c(e)
\]

s.t.

\[
p[q_E(e) V - F] + (1 - p)[q_D(e) V - F] \geq 0
\]

At the optimal contract, the above condition must bind, substitution and simplifying give the following result:

\[
\max_e [pq_E(e) + (1 - p)q_D(e)] V - c(e)
\]

The first-order condition is:

\[
[pq'_E(\tilde{e}) + (1 - p)q'_D(\tilde{e})] V - c'(\tilde{e}) = 0
\]  

(12)

We can see under separating, the lawyer has extracted all the surplus from both clients, while under pooling, the easy type client has some positive surplus and the difficult type has negative surplus.\(^7\)

Over the entire pool of clients, i.e. \(p\) fraction of easy type and \((1 - p)\) fraction of difficult type, the lawyer’s utility \(U_L\)

\[
U_L(separating) = p[q_E(\tilde{e}_E) V - c(\tilde{e}_E)] + (1 - p)[q_D(\tilde{e}_D) V - c(\tilde{e}_D)]
\]

\[
\geq p[q_E(\tilde{e}) V - c(\tilde{e})] + (1 - p)[q_D(\tilde{e}) V - c(\tilde{e})]
\]

Since \(e_E\) and \(e_D\) maximise each of the expression in the square brackets

\[
= [pq_E(\tilde{e}) + (1 - p)q_D(\tilde{e})] V - c(\tilde{e})
\]

\[
= U_L(pooling)
\]

Thus, the optimal contract is separating with \((\tilde{F}_E, \tilde{e}_E)\) for the easy type and \((\tilde{F}_D, \tilde{e}_D)\) for the difficult type.

\(^7\)Proof of this proposition will be included in the thesis.
**Implications:**

1. Both client types receive the efficient level of effort.
2. Difficult type receives less effort from the lawyer.\(^8\)
3. Both client types have a zero consumer surplus.
4. This is a signaling equilibrium where the lawyer reveals to each client their true type.

### 3.3 Client has private information and Client offers

Suppose the client knows his true type, he then offers a contract to the lawyer. The lawyer can either accept the case and bring it to the court or reject it. A similar problem arises here for the client in deciding whether to offer a different contract revealing his type or offer the same contract for both types.

The profit maximising condition for the client

\[
\max_{F_E, F_D, e_E, e_D} q_j (e_j) V - F_j \text{ for } j = E, D
\]

Suppose the client offers a separate contract for each type.

**Easy E client**

Client’s objective function:

\[
\max_{F_E, e_E} q_E (e_E) V - F_E \quad (14)
\]

s.t.

\[
F_E - c(e_E) \geq 0
\]

At the optimal contract, the above condition must bind otherwise the client can decrease \(F_E\) by a small increment and increase surplus.

Using the equality condition, the objective function becomes

\[
\max_{e_E} q_E (e_E) V - c (e_E)
\]

and taking the first-order condition:

\[
d'_E (e_E) V = c' (e_E) \quad (15)
\]

**Difficult D client**

\(^8\)This can be easily shown and the proof will be included in the final thesis.
Similarly for the difficult type, we can show that the client will choose a level of lawyer effort such that

\[ q_D'(\tilde{e}_D) V = c'(\tilde{e}_D) \]  

Suppose the client offers the same contract, he would

\[
\max_{F, e} q_j(e) V - F
\]

s.t.

\[ F - c(e) \geq 0 \]

The above constraint must hold at equality, thus the client must

\[
\max_{e} q_j(e) V - c(e)
\]

Since we cannot find a single \( e \) that maximises for both types, a single contract is going to perform strictly worse off than a differential contract which maximises the surplus of both types.

**Implications:**

1. Both client types receive efficient level of effort from the lawyer.
2. Lawyers receive no surplus from either type.
3. This is a signalling equilibrium where the client reveals to the lawyer his true type.

### 3.4 Client has private information and Lawyer offers

Suppose the client offers a contract for \((e, \alpha)\) where \(\alpha \in (0, 1)\)\(^9\) and the lawyer who has the private information either accepts or rejects. The case then proceeds to court if the lawyer accepts.

The objective function of the client is:

\[
\max_{\alpha_E, \alpha_D, \bar{e}_E, \bar{e}_D} \quad p(1 - \alpha_E)q_E(e_E) V + (1 - p)(1 - \alpha_D)q_D(e_D) V
\]

s.t.

\[
\begin{align*}
\alpha_Eq_E(e_E) V - c(e_E) & \geq \alpha_Dq_E(e_D) V - c(e_D) \\
\alpha_Dq_D(e_D) V - c(e_D) & \geq \alpha_Eq_D(e_E) V - c(e_E) \\
\alpha_Eq_E(e_E) V - c(e_E) & \geq 0 \\
\alpha_Dq_D(e_D) V - c(e_D) & \geq 0
\end{align*}
\]

\(^9\)We note a fixed fee \( F \) is not offered here because the setup does not satisfying the single crossing condition and trying to solve the problem using the standard techniques (as used in Model 1) will become extremely complicated.
This then becomes a standard screen model and we can show IR$_E$ and IC$_D$ are redundant, and IC$_E$ and IR$_D$ must bind at the optimal solution.

Using the equality of IC$_E$ and IR$_D$ and simplifying the objective function:

$$\max_{e_E, e_D} p[q'_E(e_E)V - c'(e_E)] - c(e_D) - c'(e_E) + (1 - p)[q_D(e_D)V - c(e_D)]$$

The first-order conditions are:

$$p[q'_E(e_E)V - c'(e_E)] = 0$$
$$q'_E(e_E)V = c'(e_E)$$  \hspace{1cm} (19)

$$p\left[-c(e_D)\left[\frac{q_D(e_D)q'_E(e_D) - q_D(e_D)q_E(e_D)}{q_D(e_D)^2}\right] - c'(e_D)\frac{q_E(e_D)}{q_D(e_D)} + c'(e_D)\right] + (1 - p)[q'_D(e_D)V - c'(e_D)] = 0$$

$$-pc(e_D)\left[\frac{q_D(e_D)q'_E(e_D) - q_D(e_D)q_E(e_D)}{q_D(e_D)^2}\right] + (1 - p)q'_D(e_D)V = \left[1 - 2p + p\frac{q_E(e_D)}{q_D(e_D)}\right]c'(e_D)$$  \hspace{1cm} (20)

Implications:

1. The easy type receives the efficient amount of effort from the lawyer.

2. The difficult type does not receive the efficient amount of effort.\textsuperscript{10}

3.5 Discussion

The above results (as summarised in Table 1) illustrate when the informed party offers the contract, the contract is optimal under fixed fees and the level of effort from the lawyer is efficient. The informed party will offer a different contract for each type thereby revealing the true type of the client. However, inefficiency occurs when the uninformed party offers the contract and in model 3.4, contingent fees provided little help in solving the problem. It is interesting to note that in all four scenarios, the easy type $E$ always receive the efficient amount of effort from the lawyer.

**Proposition 1:** It is possible to find an equivalent conditional fee for the optimal fixed fee.

The utility functions of each party are summarised in Table 2:
Table 1: Summary of results

<table>
<thead>
<tr>
<th></th>
<th>Client</th>
<th>Lawyer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offeror</td>
<td>efficient effort</td>
<td>not efficient effort for difficult</td>
</tr>
<tr>
<td>Client</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lawyer</td>
<td>not efficient effort for difficult</td>
<td>efficient effort</td>
</tr>
</tbody>
</table>

Table 2: Utility functions

<table>
<thead>
<tr>
<th>Head</th>
<th>Fixed</th>
<th>Conditional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lawyer</td>
<td>$F_j - c(e_j)   $</td>
<td>$q_j (e_j) w_j e_j - c(e_j) $</td>
</tr>
<tr>
<td>Client</td>
<td>$q_j (e_j) V - F_j$</td>
<td>$q_j (e_j) V - q_j (e_j) w_j e_j$</td>
</tr>
</tbody>
</table>

Suppose $F_j = q_j (e_j) w_j e_j$, provided we can adjust $w_j$ for each type $j$, we can always find an equivalent conditional fee for each optimal fixed mechanism, in particular, $w_j = \frac{F_j}{w_j e_j}$.

**Proposition 2**: Contingent fees may be less efficient than fixed fees.

Consider the IC and IR constraints under the two mechanisms:

1. Fixed fee:

   $q_E (e_E) V - F_E \geq q_E (e_D) V - F_D$  \hspace{1cm} (IC$_{E,F}$)
   $q_D (e_D) V - F_D \geq q_D (e_E) V - F_E$  \hspace{1cm} (IC$_{D,F}$)
   $q_E (e_E) V - F_E \geq 0$  \hspace{1cm} (IR$_{E,F}$)
   $q_E (e_E) V - F_E \geq 0$  \hspace{1cm} (IR$_{D,F}$)

2. Contingent$^{11}$:

   $(1 - \alpha_E)q_E (e_E) V - F_E \geq (1 - \alpha_D)q_E (e_D) V - F_D$  \hspace{1cm} (IC$_{E,C}$)
   $(1 - \alpha_D)q_D (e_D) V - F_D \geq (1 - \alpha_E)q_D (e_E) V - F_E$  \hspace{1cm} (IC$_{D,C}$)
   $(1 - \alpha_E)q_E (e_E) V - F_E \geq 0$  \hspace{1cm} (IR$_{E,C}$)
   $(1 - \alpha_D)q_E (e_E) V - F_D \geq 0$  \hspace{1cm} (IR$_{D,C}$)

Suppose we let

$$F_{E,F} = \alpha_E q_E (e_E) V + F_{E,C} \hspace{1cm} (21)$$

$^{10}$More analysis is required for the difficult type. It will be useful to compare the effort here with the one in Model 1.

$^{11}$A fixed fee component was added to the contingent fee for a generalised result.
From results in 3.1 in reducing the number of accidents. The injurer chooses the level of care
and it decreases with increasing
the injurer does not know a victim’s type

\[ LHS = (1 - \alpha D)q_D(e_D)V - [F_{D,NL} - \alpha_D q_E(e_D)V] \]

\[ RHS = (1 - \alpha_E)q_D(e_E)V - [F_{E,NL} - \alpha_E q_E(e_E)V] \]

\[ LHS - RHS = [q_D(e_D) - q_D(e_E)]V + \alpha_D [q_E(e_D) - q_D(e_D)]V \]

\[ -\alpha_E [q_E(e_E) - q_D(e_E)]V + [q_E(e_E) - q_E(e_D) + q_D(e_D) - q_D(e_D)]V \]

\[ = [q_E(e_E) - q_D(e_E)]V - [q_E(e_E) - q_D(e_D)]V \]

\[ + \alpha_D [q_E(e_D) - q_D(e_D)]V - \alpha_E [q_E(e_E) - q_D(e_E)]V \]

\[ = (1 - \alpha_E) [q_E(e_E) - q_D(e_E)]V - (1 - \alpha_D) [q_E(e_D) - q_D(e_D)]V \]

Suppose \( \alpha_E = \alpha_D = \alpha \)

\[ = (1 - \alpha) \{ [q_E(e_E) - q_D(e_E)] - [q_E(e_D) - q_D(e_D)] \} V \]

For relatively small \( e_E \) and \( e_D \),

\[ < 0 \]

Thus, the IC of the contingent fee may not be satisfied.

\[ F_{D,F} = \alpha_D q_E(e_D)V + F_{D,C} \]

such that the IC of both fees are equal, we can show IC of both fees will not be satisfied.

Substitute (5) and (6) into IC of both fees

\[ LHS = (1 - \alpha D)q_D(e_D)V - [F_{D,NL} - \alpha_D q_E(e_D)V] \]

\[ RHS = (1 - \alpha_E)q_D(e_E)V - [F_{E,NL} - \alpha_E q_E(e_E)V] \]

\[ LHS - RHS = [q_D(e_D) - q_D(e_E)]V + \alpha_D [q_E(e_D) - q_D(e_D)]V \]

\[ -\alpha_E [q_E(e_E) - q_D(e_E)]V + [q_E(e_E) - q_E(e_D) + q_D(e_D) - q_D(e_D)]V \]

\[ = [q_E(e_E) - q_D(e_E)]V - [q_E(e_E) - q_D(e_D)]V \]

\[ + \alpha_D [q_E(e_D) - q_D(e_D)]V - \alpha_E [q_E(e_E) - q_D(e_E)]V \]

\[ = (1 - \alpha_E) [q_E(e_E) - q_D(e_E)]V - (1 - \alpha_D) [q_E(e_D) - q_D(e_D)]V \]

4 The Model of Accident

We extend the above model to the pre-accident period and examine the role of litigation
in reducing the number of accidents. The injurer chooses the level of care \( x \) to take in
preventing an accident from occurring. Let \( h(x) \) be the probability of an accident occurring
and it decreases with increasing \( x \) but at a decreasing rate i.e. \( h' < 0, h'' > 0. \) We assume,
for simplicity, \( x \) does not affect the magnitude of damages \( V \). Furthermore, we assume
the injurer does not know a victim’s type \( j \) and he incurs litigation costs \( L_d \) in defending
his case in court.

Objective function for the injurer:

\[ \min x + h(x) \{ p [q_E(e)V + L_d] + (1 - p) [q_D(e)V + L_d] \} \]

(23)

The first-order condition:

\[ 1 + h'(x) \{ p [q_E(e)V + L_d] + (1 - p) [q_D(e)V + L_d] \} = 0 \]

\[ h'(x) = - \frac{1}{p [q_E(e)V + L_d] + (1 - p) [q_D(e)V + L_d]} \]

(24)
Applying this to the optimal contract in all the models:

Model 3.1:

\[ h'(x_1) = \frac{1}{p [q_E(e_E)V + L_d] + (1 - p) [q_D(e_D)V + L_d]} \]  

Model 3.2 and 3.3:

\[ h'(x_2) = \frac{1}{p [q_E(e_E)V + L_d] + (1 - p) [q_D(e_D)V + L_d]} \]  

Model 3.4:

\[ h'(x_4) = \frac{1}{p [q_E(e_E)V + L_d] + (1 - p) [q_D(e_D)V + L_d]} \]  

Since we established \( \hat{e}_D > \text{ce}_D \), then

\[ q_D(e_D) > q_D(e_D) \]
\[ h'(x_2) > h'(x_1) \]
\[ x_2 > x_1 \]  

i.e. the injurer will take greater care in Model 3.2 and 3.3 in comparison to 3.1. This means the injurer will exercise more care when the lawyer exerts more effort as a result of the informed party offering the contract. This can be easily explained as the extra effort exerted by the lawyer increases litigation and associated costs for the injurers. Consequently, the injurers will observe greater precautions to reduce the possible pool of accidents for litigation. Also note if the difficult type is shut out in Model 3.1, then \( x \) will fall even further, resulting in less care.

5 Social Optimality

A socially optimal contract is defined to be one which minimises all the excess costs, namely lawyer’s effort costs \( c(e) \) and injurer’s care costs \( x \). The social planner’s objective function is:

\[ \min_x x + h(x) [V + c(e)] \]  

5.1 Social planner controls behaviour of all parties

Suppose the social planner can control all aspects of the system, then she would desire the "first-best" solution, that is,

\[ c'(e) = 0 \]
\[ e = 0 \]  

12
and

\[
h'(x) = -\frac{1}{V + c(e)}
\]  \hspace{1cm} (31)

This implies the social planner would like the lawyers to exert no effort and the injurers to take more care. However, this outcome may not be realistic if care must be induced through the legal system (Miceli and Segerson (1991)).

5.2 Social planner takes contract as given and controls injurer’s behaviour

If the social planner does not have full information, then her objective function is:

\[
\min_x h(x) [V + pc(e_E) + (1 - p)c(e_D)]
\]  \hspace{1cm} (32)

The first-order condition is:

\[
h'(x) = -\frac{1}{V + pc(e_E) + (1 - p)c(e_D)}
\]  \hspace{1cm} (33)

comparing with the injurer’s behaviour (ignoring \(L_d\) for simplicity)

\[
h'(x) = \frac{1}{pq(e)\bar{V} + (1 - p)q(e)\bar{V}}
\]  \hspace{1cm} (34)

Thus, regardless whether the social planner has or does not have full information, the social planner requires the injurer to exercise more care for given a level of \(e\). However, the optimal level of care can be achieved by imposing punitive damages. The punitive damages increase as \(e\) deviates from the efficient \(e\).\textsuperscript{12}

5.3 Social planner takes injurer’s behaviour as given and regulates contract

We can consider the two possible degrees of control the social planner has when regulating the contract between the lawyer and her client. In the first instance, the planner can force the informed party to choose the contract, then we will arrive at the same efficient results as Model 3.2 and 3.3. However, if the social planner cannot force the informed party to choose the contract and must take the information asymmetry as given, the contract chosen by the parties may not be the same as the one chosen by the planner. It may be possible that the intervention can improve the inefficient solutions obtained in Model 3.1 and 3.4.\textsuperscript{13}

\textsuperscript{12}Proof in progress.

\textsuperscript{13}This area is currently being explored and discussed with supervisor.
6 Limitations and Extensions

The comparison between the three fee arrangements under the litigation model is not complete as the mathematical derivations are fairly complex. However, it is an important aspect of the thesis and we will continue to explore the area. A more detailed analysis of social optimality is also in the process of completion. We envisage some interesting results from the social planner’s optimal choice of contract. This would have important policy implications and may call for greater intervention in the contractual relationship between lawyers and clients.

We have contemplated several possible extensions to the model. Firstly, we could introduce a continuum of plaintiff types as a test for robustness of our results. Secondly, it may be interesting to use historical data before and after the introduction of conditional fees in Australia as a rough empirical test.

We recognise there are many limitations with our model, in particular we do not include settlement as a potential resolution mechanism. We acknowledge the increasing use of settlement in personal injury cases, however, the introduction of settlement into the model would complicate the structure and provide little benefit for our focus. It is best, in our view, to deal with settlement as a separate issue as an extension to this paper. We recognise there are some aspects of the model which are not very realistic, for example, the offeror has all the bargaining power. However, this captures the essence of the asymmetric information and a complicated bargaining model would again add little value to our argument. It can be argued for lay clients, it is reasonable to assume the lawyer offers the contract and retains all the bargaining power. On the other hand, for medical negligence cases, the client has a greater degree of bargaining power.
References


