An Economic Model for Structures of the Legal Profession

Does an Independent Bar improve social outcomes?

Author: Ashley Cheng
Student ID: 3206691

Supervisor: A/Prof. Hodaka Morita

Bachelor of Commerce (Business Strategy & Economic Management) (Honours) AND
Bachelor of Laws

24th October, 2011
Declaration

I declare that this thesis is my own work and that, to the best of my knowledge, it contains no material that has been published or written by another person(s) except where due acknowledgement has been made. This thesis has not been submitted for award of any other degree or diploma at the University of New South Wales or at any other educational institution. I declare that the intellectual content of this thesis is the product of my own work except to the extent that assistance from others is acknowledged.

.......................................
Ashley Xinhan Cheng JP
24 October 2011
I give thanks to the following people:

Firstly and foremost, to my Supervisor Associate Professor Hodaka Morita: Words cannot express the depth of my indebtedness to your teaching and guidance. I am forever grateful for your patience and willingness to provide me with assistance, no matter the time. I am forever inspired by your ability to express the most complex concepts in a concise and logical manner. I owe you an enormous intellectual debt that I fear I can never repay.

To Dr. Suraj Prasad: Thank you for your assistance, inspiration and willingness to help me with my thesis. I am grateful for

I thank Professor Oliver Hart and Dr. Guillaume Roger for inspiring in me, a passion for organisations, incentives and economics

I thank Professor Anup Malani, Professor Richard Holden, Associate Professor Gautam Bose, Dr. Alberto Motta, and Dr. Gabriele Gratton for their comments and criticism which have helped me polish this thesis.

To the Honours Cohort of 2011: Thank you for making the year most enjoyable. I am very fortunate to have such excellent friends. You are all “so advanced!”

Last, but not least, I thank my family for their support during my educational career. Particularly, I thank:

My parents: for their stern hand in bringing me up and for their never-ending support and encouragement; and

My aunts: who provided me with the opportunity to attend Harvard University.
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Abstract

There are two predominant structures for organising the legal profession. Under the Split Profession system, lawyers practice either as solicitors or barrister. Under the Fused Profession system, there is no distinction between solicitors and barrister and lawyers practice as Attorneys-at-law. Both systems are observed in practice. However, no convincing explanation has been proffered to explain the trade-offs between the two systems.

I construct a theoretical model for litigation and use it analyse the outcomes from the Split Profession system and the Fused Profession system. I assess the outcomes of each system based on three criteria: 1) Whether the system allocates effort efficiently between the lawyers whilst preserving the independence of the lawyers from the client; 2) the probability that the system achieves justice; and 3) the social welfare implications.

I find that the division of labour in the Split Profession inefficient but there is evidence that the Split Profession system preserves the independence of the solicitor and the barrister from the client. The result is driven by a number of trade-offs faced by the Solicitor which results in externalities being experienced. However, these externalities also mean that, under the Split Profession system, the lawyers are less influenced by the Client and hence preserve their independence. This is not the case in the Fused Profession system. I also find that the client’s interest in the outcome of the litigation strongly the probability with which the Fused Profession system achieves justice. There are different circumstances in which each system is more likely to realise justice which create a trade-off between avoiding miscarriages of justice and errors of impunity. Finally, I conjecture that the correlation between the inherent justice of a client’s case and his/her payoff from winning influences the choice of system.
Chapter 1
Introduction and Motivation

~ The division of the profession into two distinct branches is one of the most obvious peculiarities of our system, and requires to be rationally and convincingly justified ~

- Evershed Report, 1953[1]

1.1 Introduction

In 1937, Ronald Coase made the following observation: If markets are so efficient, then why do firms exist? [Coase, 1937]. The simple answer to Coase’s question is that markets are not always efficient. Sometimes, firms perform better than markets in allocating resources. This thesis asks a question in a similar vein: If using a Fused Profession system leads to better social outcomes (as claimed), then why do some countries persist in employing a Split Profession system?

There are two predominant ways to organise the legal profession: 1) A Split Profession which distinguishes between solicitors and barristers; and 2) a Fused Profession which does not. That different jurisdictions use different systems, and persist in using those systems, suggests that there are trade-offs between the two systems. However, those trade-offs have not been well studied. This thesis presents one possible methodology for understanding those trade-offs. For clarity, the research question of this thesis is: What are the trade-offs involved in structuring the legal profession as a Split Profession versus a Fused Profession? Under what circumstances does one system perform better than the other?

An obvious question to ask is whether the decision to adopt a Split Profession system or a Fused Profession system is purely historical or by chance. However, I argue that the reason why some countries persist in using a Split Profession system is not historical nor is have the systems been adopted on whim. By way of contrary example, South Australia had a Split Profession system until 1993 when the s6 of the Legal Practitioners Act 1981 (SA) was amended to formally fuse the

1Cmnd 8878, Evershed and Ors. [1953]
profession. Many countries of British colonial heritage, such as the United States of America, Singapore and Nigeria, changed from a Split Profession system to a Fused Profession system. On the other hand, in countries such as Canada, there exists a Bar Association, a voluntary association of barristers, despite a Fused Profession structure. These jurisdictions are fused de jure (by law) but are de facto (in fact) split. This division also occurs in Australia in States such as Western Australia and Victoria.

The literature exploring this area is sparse. To the best of my knowledge, there is no other paper which describes an economic model for the structure of the legal profession. Whilst Bishop (1989) provides an intuition-based model describing some of the benefits of the Split Profession system in economic terms, he neither presents a formal model nor makes comparisons about the circumstances in which a Split Profession system would be better than a Fused Profession system. Legal scholars, such as Maute (2002) and Cohen (1987), present a historical account of the Split Profession system in England and argue that a Fused Profession system is better. On the other hand, Forbes (1979) argues favourable for the Split Profession system and the New South Wales Law Reform Commission (1982) present strong arguments for both a Split Profession and a Fused Profession system (although they ultimately recommend a Fused Profession). Differing opinions in the literature strengthens the argument that there are trade-offs between the two systems and that there are circumstances where one system will prevail over the other.

In this thesis, I employ a theoretical model of litigation to analyse the impact of the two different systems on litigation outcomes. The client hires the lawyers as agents and incentivises them according to binary incentive contracts. To the best of my knowledge, this approach to modelling litigation is unknown to the literature. Whilst Gilson and Mnookin (1994) uses a model where the lawyers act as agents of the client, he does not consider incentive contracts or continuous strategies for the lawyers’ effort.

I assess the merits of each system on three criteria: 1) Efficiency; 2) the probability with which justice is realised; and 3) Implications for Social Welfare. The professional structure is efficient if it allocates the lawyers’ efforts efficiently. A system achieves justice if the Judge makes the correct decision concerning the outcome of the case. I present some circumstances under which each system is better than the other and analyse some trade-off involved between the two systems. These results are consistent with past policy choices concerning regulation of the legal profession and may have implications for future policy making.
Thus, the contribution of this thesis is two-fold. Firstly, the thesis presents a theoretical model as one possible methodology for understanding the trade-offs between a Split and a Fused legal profession. To the best of my knowledge, there are no papers which do this. Secondly, the model that this thesis employs is based on litigation using agents. Whilst Gilson and Mnookin (1994) also use agents in a litigation model, this model is the first to use incentive contracting as a basis for motivating those agents and analysing their behaviour.

I organise this thesis in the following manner: Chapter 2 reviews the existing literature. Chapter 3 explains the institutions of attorneys, solicitors and barristers with reference to the historical developments in the English and American legal professions. Chapter 4 presents a model of litigation under the two systems and characterises a Subgame Perfect Nash Equilibrium. It also presents some results from the model. Chapter 5 provides a discussion of the core intuition from the model and presents a discussion on the allocative efficiency of the effort levels in both systems and the independence of the lawyers under the Split Profession system. Chapter 6 applies the model to assess the ability of each system to achieve justice. Chapter 7 discusses social welfare for the two systems. Chapter 8 proposes possible extensions to the model. Chapter 9 concludes.

For clarity, I explain the specific terminology used in this thesis. I use the word ‘lawyers’ to refer to any legal practitioner without distinguishing between attorneys, solicitors and barristers. I use the word ‘attorney’ in the sense of an attorney-at-law and use this term specifically to refer to a lawyer practising in a Fused profession. ‘Solicitor’ and ‘Barrister’ are used to refer specifically to those two types of lawyer. I use the female pronoun to describe the solicitor and the male pronoun to describe the barrister. Of course, there are both male solicitors and female barrister. My use of the gender specific pronoun is for convenience only and incorporates all genders. I use the terms “Fused Profession” and “Attorney system” interchangeably. I also use the terms “Split Profession” and “Solicitor-Barrister system” interchangeably.
There are very few papers which analyse the structure of the legal profession from the perspective of the trade-offs between a Fused vs. Split profession. To the best of my knowledge, only Bishop (1989) considers this question in an economic framework. Other authors, predominantly legal scholars, consider the question from a law reform standpoint and offer limited economic insights into the trade-offs between the two systems. There is some literature which present models related to the legal profession. However, they are not apt to study the trade-offs between structures of the legal profession. In this Chapter, I will examine the Legal Scholarship and the Economic Scholarship in turn.

2.1 Jurisprudence - Split vs. Fused Profession

The jurisprudential approach to analysing the two systems for organising the legal profession is dominated by the lens of law reform. Most papers accept the Split Profession system as the default position and discuss the flaws in that system. They use these flaws as a basis to argue for a Fused Profession. Maute (2002) discusses the history of the English legal profession and finds that the Split Profession system in England was a ‘result of historical accident, driven by class distinction and economic turf protection’ (Maute 2002, p. 1358). She finds that the barrister class deliberately separated itself from solicitors and enforced the distinction though a policy of exclusion. Maute concludes that there is no reason that the English legal profession could not be fused. However, she does note that complete fusion would be unlikely because there will be a need for specialist advocates.

Cohen (1987) takes a similar position to Maute in that he argues the English legal profession should be fused. However, Cohen goes further and makes the argument that there are significant costs associated with the Split Profession which are not justified by the benefits. In particular, he argues that there is a waste of talent because of the friction in moving between the two professions. Some solicitors may find that they are better suited for advocacy whilst some barristers may find that they are more suited for the solicitor’s job. As a result, Cohen argues, there is a wastage of talent caused by the rigidity of the system (Cohen 1987). Cohen also
argues that the restrictive practices regarding admission to become a barrister may deter suitable applicants. He claims that the admission is ‘not granted on the basis of merit alone’ and that, ‘within the bar, status and conduct is controlled by a small group at the top’ (Cohen, 1987, p. 17). Cohen states that this results in the waste of human talent.

In support of his argument, Cohen cites Reeves (1986) and draws on a number of Reeves’ arguments to support his conclusions. Reeves, himself, strongly criticises the Split Profession system. He argues that the legal profession is too rigidly divided and cannot adapt to changing consumer needs and demands. Instead, ‘the consumer must adapt to the system’ (Reeves, 1986, p. 55). Reeves support Cohen’s assertion that there is wasted talent because there are solicitors who have expertise in advocacy and who are employed by other solicitors who do not possess this expertise. Furthermore, he argues that client confidence in the legal profession may be reduced if an experienced solicitor takes a subordinate role to a relatively inexperienced barrister only because of the traditional professional structure (Reeves, 1986, p. 111). Reeves also argues that there is an overall cost savings to fusion which result from avoiding wastage of talent and duplication of work.

Forbes (1979), on the other hand, argues favourably for a Split Profession system. Forbes presents five arguments in support of the Split Profession. Firstly, he makes the well accepted argument that the Split Profession takes advantage of the returns to specialisation. Secondly, he argues that there are no significant cost savings achieved by the Fused Profession system. Forbes goes further, and claims that ‘if division is costlier, the extra cost may be worth paying’ (Forbes, 1979, p. 253). Forbes makes the argument that ethical standards are raised through the use of the Split Profession because the barrister is separated from the client by the solicitor. He argues this preserves the independence and detachment of barristers. Finally, Forbes argues that the Split Profession system leads to better legal education and scholarship (Forbes, 1979, p. 264).

On the other hand, New South Wales Law Reform Commission (1982) Report, on the legal profession, makes balanced arguments for and against the Split Profession system. The Commission notes the common arguments made in favour of the Split Profession: 1) there are gains to specialisation; and 2) the lawyers are more independence and objective in the execution of their duties. Furthermore, the Commission notes that there are circumstances where the Split Profession achieves better outcomes because there is a division of labour (Commission, 1982 para. 3.45- 3.50). The Commission also notes that the Split Profession reduces
‘client-poaching’ and promotes collegiality at the Bar (Commission 1982, para. 3.69, 3.74-3.75). However, the Commission ultimately recommends a Fused Profession system because it found that, in the majority of cases, ‘one lawyer would be sufficient and more economical’ (Commission 1982, para. 3.80)

2.2 The Economic Literature

There is a paucity of economic scholarship which examines the differences and trade-offs between a Split Profession and a Fused Profession by analysing the conduct of the lawyers. Bishop (1989) conducts an analysis of the Split Profession and the Fused Profession system through a vertical integration model. Bishop states that ‘the evidence of most jurisdictions where it is allowed that vertical integration tends to emerge natural in the market for legal services. So, prohibiting it does generate some cost...Is that cost offset by some larger gain?’ (Bishop 1989, p. 329). This implies that there is some trade-off between a vertically separated profession (i.e. a Split Profession) and a vertically integrated profession (i.e. a Fused Profession).

Bishop argues that a Split Profession reduces the agency costs involved in the client-solicitor relationship because it removes the financial incentive to choose advocates (including the solicitor himself) who may not necessarily be suitable for the client’s case but who are financially or socially connected to the solicitor. Furthermore, the Split Profession takes advantage of returns to specialisation as lawyers are forced to specialise as either solicitors or barristers.

Bishop claims that there are two beneficial externalities created by the Split Profession. Firstly, there is ‘public capital-formation’ because better quality precedent cases are litigated (Bishop 1989, p. 332). This follows directly from the claim that there are high returns to barristers specialising. If barristers acquire highly specialised knowledge (as a result of the Split Profession system), this enhances the quality of their legal argument. Furthermore, since judges are primarily drawn from the ranks of barrister, the quality of judicial officers is enhanced by the specialist knowledge they acquire as a barrister. The second positive externality of the Split Profession is lower costs of administering justice. The lower costs arise because the specialist barrister is able to put a better case to the judge. As such, the judge is better informed and spends less effort making the correct decision.

On the other hand, Bishop argues that there is a potential negative externality in the Split Profession because it encourages the formation of clubs. Bishop adopts the definition of a club used in Buchanan (1965), that is: a club is an association of consumers/producers who produce private goods at a smaller cost. He claims
that the separation of barrister from solicitors forms a barrister’s club. If ‘the standards of the “club” are stronger than the commercial self-interest of the lawyer as businessman’ (Bishop, 1989, p. 331), then the standards of the club can positively influence the behaviour of the barristers. This may lead to higher ethical standards amongst members of the club. On the other hand, if the standards of the club are weaker than the self-interest of the lawyer, there may be decreased ethical standards because the club has a negative influence. As a result, if the standards of the club are low, there can be a social cost associated with the Split Profession system. Bishop concludes by stating that some trade-offs between the two systems makes the choice between the two professional structure unclear.

Much of the remaining economic scholarship studying the legal profession at the industry level is directed to analysing the monopoly power that the legal profession holds over legal services. Leland (1979) justifies the legal profession monopoly through the use of a licensing model. He finds that, in markets of asymmetric information where the seller knows more about the quality of the product than the buyer and product quality is endogenously chosen, there is a tendency to reach a suboptimal equilibrium level of quality. However, if the profession is permitted to self-regulate, then it imposes too high a standard. Carroll and Gaston (1983) use a similar approach to Leland and find consistent results. They show that, whilst the quality of the product delivered is higher under a licensing scheme for professionals, the quality received is not necessarily higher due to excessive restrictions imposed by the regulation. Here, the quality of the product refers to the quality of the legal services provided.

On the other hand, authors such as Garicano study of the legal profession on a firm and individual level. Garicano and Hubbard (2009) conduct an empirical study showing that lawyers field-specialise and that field-specialisation tends to increase as the market size increase. The authors use confidential data from the 1992 Census of Services (US) to run regressions on the percentage of lawyers in a given firm which specialise in a given field. They find that as market size increases, lawyers tend to specialise. This causes the firm to specialise as well because some areas of practice are ‘spun off’ (Garicano and Hubbard, 2009, p. 33). They conclude that this is more a result of knowledge sharing rather than risk sharing. Garicano and Hubbard (2009) provides one justification for a Split Profession system. Following from the result in that paper, as market size increases some lawyers will specialise in advocacy and trial work. If this body of specialise advocates reaches critical mass, then there may be a change in the structure of the legal profession creating a Split Profession.
Garicano and Hubbard (2009) refers to an earlier paper by Garicano and Santos (2004) entitled ‘Referrals’. In that paper, the authors present a theoretical model which describes a situation where one agent must make a decision about whether or not to refer a task to another, more suitably qualified agent. They find that averse selection precludes an efficient matching of skills and opportunities unless there is an income-sharing arrangement. However, income-sharing leads to a distortion in the provision of effort by agents with higher skills. Relevantly, the authors also consider formal partnerships as ex-ante contracts for referrals. They find that partnership arrangement improves the outcomes because it punishes agents who deviate and limits ex-post competition by restricting the trading partners ex-ante. As such, partnerships should arise where the agents are similarly skilled because inefficient appropriation of opportunities is greatest under these circumstances.

Another branch of the literature related to this thesis are papers studying litigation. A number of economic papers propose models for litigation\(^1\). Whilst this thesis does not directly examine the impact of the structure of the legal profession on litigation per se, the model presented in this thesis is one set in the context of litigation. Therefore, it is important to contextualise the model in the literature.

One economic paper which attempts to model the process of litigation is Leeson (2011). Leeson describes a simplistic model which examines the ancient method of litigation: trial by battle. The model is an all-pay auction where the agents can improve the probability that they win the auction by expending effort on hiring a better champion (the primitive form of the lawyer) to do battle on their behalf. Leeson uses the Tullock contest-success function to calculate the probabilities of winning. Leeson’s results are dependent on the agents different valuations of winning. He does not consider any inherent justice in the litigants case but rather allocates the victory to the litigant who values winning the most. However, Leeson finds that the trial by battle ‘violent auction’ (Leeson, 2011 p. 61) creates less incentives for rent-seeking behaviour compared to first-price ascending bid auctions. Leeson argues that this occurs because of the all-pay structure and because the highest-bidder does not always win. As a result, Leeson finds that the trial-by-battle auction is “rent-seeking superior” to regular [First-price ascending] auctions. But regular auctions are allocatively superior to violent ones” (Leeson, 2011 p. 61).

Gilson and Mnookin (1994) presents a model of litigation based on a finitely repeated Prisoner’s Dilemma. Each player can co-operate (i.e. disclose information) or defect

\(^1\)See Cooter and Rubinfeld (1989) for a fairly detailed survey of the literature
(i.e. not disclose information). The dominant strategy for each player is, of course, to defect in each round of the game. The authors then make a novel contribution to the literature by introducing the idea that litigation is carried out by agents (i.e. lawyers) and not the clients themselves. They note that the literature up to that point had always modelled the litigation process as a contest between two principals and thereby “abstracting away the legal system’s central institutional characteristic — litigation is carried out by agents.” (Gilson and Mnookin, 1994, p. 510). To the best of my knowledge, this is the first paper which considers the litigation process with the clients hiring agents. The authors model the game as a two stage game where, the client choose lawyers based on their reputation in the first period and, in the second period, play an finitely repeated prisoner’s dilemma. The authors make two conclusions which are of interest here. Firstly, they find that lawyers with reputation for being co-operative can bind their clients to a co-operative strategy in the prisoner’s dilemma and thereby alleviate the prisoner’s dilemma problem. Secondly, they find that the principal-agent relationship and the associated agency problem can, in some circumstances help co-operation in the litigation stage and in other circumstances can hurt co-operation.

Neither Leeson’s nor Gilson & Mnookin’s model examine the impact of the structure of the legal profession on private and social outcomes in litigation. Furthermore, although Gilson & Mnookin’s model incorporates agents in the litigation process, it does not capture the incentive dynamics because the model’s results rely on the reputational costs to the lawyers. It also does not incorporate any information about the structure of the client-lawyer relationship (i.e. whether it is a client-solicitor-barrister or a client-attorney relationship). As a result, their model cannot make conclusions about the impact of the structure of the legal profession on litigation outcomes.

My model owes some inspiration to the literature on Tournaments. The seminal paper is Lazear and Rosen (1981). In that paper, Lazear and Rosen model the behaviour of two agents who compete to earn a prize. The tournament co-ordinator, usually the firm, observes the output of each agent and the agent with the higher output wins the Tournament and a payoff prize. The agents are risk-neutral and the individual outputs independently distributed (i.e. no common shock). Lazear and Rosen show that first-best outcomes can be achieved under a tournament structure with piece-rate contracts.
CHAPTER 3
A Gentle Introduction to the Institutions of the Law

The legal system considered in this thesis is a Common Law, Adversarial system. A Common Law system is one in which the development of the law is carried out incrementally through cases and according to the rules of precedent (i.e. *stare decisis*). An adversarial system is a dispute resolution system where the claims of each party are presented to an independent third-party who has the power to impose an authoritative determination on the issues in dispute (Butt, 2006). The adversarial system can be contrasted with an inquisitorial system in which an independent third-party conducts investigations into the merit of each party’s claim without significant assistance from the parties or their representatives. In an Adversarial, Common Law system, there are two methods to organise the legal profession: A Split profession which divides lawyers into solicitors and barristers, and a Fused Profession where there are no distinctions between ‘types’ of lawyer. In this Chapter, I present a short history of the Split profession in England and the Fused Profession in America and explain the characteristics of each professional structure.

3.1 A SHORT HISTORY OF THE LEGAL PROFESSION IN ENGLAND AND AMERICA

In order to understand the context of this thesis and the institutional framework of the legal profession, it is necessary to have a brief understanding of the history and development of the Legal Profession in England (which has the richest tradition of the Split Profession) and America (as a representative country which adopted the Fused Profession structure).

3.1.1 THE SPLIT PROFESSION SYSTEM OF ENGLAND

The legal profession in England arose out of the developing system of Common Law writs of actions. Historically, and to some extent today, an aggrieved person commenced an action against another party by way of a writ. A writ is a written
order by a Court compelling a person to do, or refrain from doing, something. The aggrieved party presents the writ in Court and, should the Court be satisfied that the criterion (i.e. the elements) of the writ are satisfied (or "made out"), the Court will issue the order on the writ. Prior to the Fifteenth century, an aggrieved party could only commence an action by applying to the Court of Chancery for a writ authorising proceedings to be commenced in a Court of suitable jurisdiction. At the time, the King’s Bench and the Court of Common Pleas were the two Court which tried all matters commenced under writ. The writ issued by the Court of Chancery was specific and, if the aggrieved party failed to obtain the correct writ, he/she could not commence proceedings in any Court. Furthermore, if no writ was available to cover the aggrieved party’s circumstances, he/she could not obtain relief. For example, a party seeking to recover land was faced with "an almost bewildering variety of writs....ranging from the petty assizes of novel desseisin and mort d’ancestor through the various types of write of entry, the congeners of mort d’ancestor, the writs of intrusions, escheat and formedon" (Brand, 1992). Given the complex system of writs, it is not surprising that the origins of legal professional were as assistants to clients dealing with the system of writs.

In the Twelfth century, the appointment of a lawyer (or an attorney in the strict legal sense) was an extremely rare occurrence. As Lady Stenton described:

...to appoint an attorney was a privilege which only the court, only the King could grant. To the end of John’s reign, it was necessary for the principal to be present in court to make the appointment or to be visited by four knights specially ordered by the court to hear him make it. Only serious illness or absence on important business or a crusade were considered justify the appointment of an attorney... (Stenton, 1965)

Early “lawyers” were no more than supporters of the litigant who provided advice and support on the applicant’s case. Over time, these “lawyers” gained the right to represent the principal in litigation and “possessed the full power to ‘win or lose’ in place of their principal” (Brand, 1992). The Leges Henrici Primi (cited in Brand, 1992) distinguishes between ‘pleaders’ who speak on their client’s behalf and ‘attorneys’ who represent their client in all aspects of the litigation. Whilst the use of attorneys to represent the client continued to develop slowly between the reigns of Henry II to Edward I (1154 – 1307), the role of the ‘pleader’ changed dramatically over this period. By the Thirteenth century, the ‘pleader’ became known as the Serjeant-at-law and his (for only males could become Serjeants)

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1 In this context, an attorney is simply a person authorised to act on another’s behalf in all matters concerning that other person.
role became closely paralleled to the modern-day barrister (Brand, 1992). As time progressed, the role of the attorney shifted from being the representative of the client in all respects to an agent who performed the necessary preparatory work to represent the client in Court. The role of advocating the client case in Court and making oral arguments became the sole prerogative of the Serjeant-at-law.

At the same time, another group of ‘pleaders’ developed. These became known as barristers. Barristers lived and practiced from the Inns of Court which were professional associations of barristers. Barristers had rights of audience (i.e., they could appear on behalf of clients at any time in any Court) and performed oral advocacy work for clients. In particularly difficult cases, the barrister would call in the assistance of a Serjeant. In the reign of Elizabeth I (1533-1603), the role of the barrister had become so elevated that Sir Francis Bacon KC persuaded the Queen to grant him a patent appointing him Queen’s Counsel Extraordinary and giving precedence amongst barristers. In the succeeding years, more Queen’s Counsel were appointed. This led to the decline of the role of Serjeant because the Queen’s Counsel had usurped the position of precedence once held by the Serjeant. The last Serjeant-at-law was Lord Lindley SL (1828-1921). As such, the role of advocacy and Court work became monopolised by the barristers. This continues to the modern day.

Solicitors developed in the Fifteenth century as the equivalent of attorneys in the Courts of Chancery. At that time, the attorneys practiced solely in the Court of Common Pleas. Proctors were the equivalent of attorneys who practiced in the ecclesiastical Courts. By the Sixteenth century, the role of solicitors, attorney and proctors began to merge (Vines, 2005). The modern profession of solicitors emerged over time to its current state.

For a more detailed discussion of the History of the English Legal Profession, the interested reader is referred to Brand (1992) The Origins of the English Legal Profession.

3.1.2 The American Fused Profession

In contrast to the English legal profession, which developed two distinct professions from a single root, the American Legal Profession inherited a Split profession from English colonisation but chose to fuse the profession. The historical reason for the American legal profession failing to adopt the Split Profession was due to the dearth
of lawyers present in each of the American colonies (Chroust, 1965). Since each of
the States of America was founded as a separate colony, the legal profession of the
America was, and to some extent remains, fragmented on State lines. An attorney-
at-law admitted to practice in Massachusetts, for example, could not practice in New
York without being admitted in the Courts of New York. Thus, the legal profession
of each State became isolated from all the other States. Furthermore, lawyers were
required to be admitted to practice in each Court they wished to practice in. Thus,
a lawyer admitted in the Massachusetts Superior Court could not practice in the
Massachusetts Inferior Court unless he was also admitted in that Court. Since the
State legal professions were small, the opportunity for specialisation was not made
available to the American attorneys.

Chroust (1965) notes that the Bar Association of Massachusetts, like Bar Asso-
ciations elsewhere, gained power and influence in the late Eighteenth century. As
a result, it established rules for the education and admission of legal practitioners
which were designed to protect the monopoly it held over the legal services. In
fact, the Massachusetts Bar Association became so powerful that it was able to
recommend that the Superior Courts appoint of three of its members to the title and
rank of barrister (see p106-107 (Chroust, 1965)). As a result, some American states
developed a Split profession in the pre-Revolution period. However, the concept
of a barrister is pre-Revolution America was different to the English concept of the
barrister. Unlike the English barrister, who was a separate professional unto himself,
the American barrister was an experienced attorney who, on the recommendation
of his peers, was permitted to argue cases in the Superior Court (Chroust, 1965).

However, as a result of the American Revolution (1763 - 1787), the Bar Associations
began to lose power. Chroust (1965) argues that this was a direct result of: one, a
“bitter antipathy against lawyers as a class”; two, the loss of many of its prominent
members; three, a strong dislike of everything English; and four, the lack of “a
distinct body of American law”. Furthermore, by the mid Nineteenth century, the
admission criteria for lawyers had been enshrined in Statute. In Massachusetts, the
Massachusetts Revised Statutes of 1836 provided rules concerning the admission of
persons as attorneys[2]. Chapter 88, §23 of the same statute abolished the distinction
between Counsellors (i.e. barristers) and Attorneys[3]. As a result of these changes,
the influence of the Bar Associations diminished along with the barrister class.
For a more detailed discussion of the History of the American Legal Profession, the
interested reader is referred to the comprehensive work of Chroust (1965) The Rise

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[2] Chapter 88, §19 provides the admission criteria for attorneys in Massachusetts
3.2 The Split Profession

A Split Profession system is characterised by the division of labour and responsibility for the conduct of litigation amongst two classes of lawyers: solicitors and barristers. A solicitor is “a class of legal practitioners, generally responsible for advising clients on legal matters, preparing legal documents, representing clients in summary matters and instructing barristers in relation to more complex advocacy work” (Butt 2006). Solicitors are responsible for the preparatory work necessary to conduct litigation. On the other hand, barristers are professional advocates who are, “by law or custom limited to advocacy and advisory work” (Butt 2006). Whilst solicitors may practice in partnerships (with some practices growing to over 100 employees), barrister are sole practitioners who work from shared office spaces known as Chambers. Barristers are often referred to as Counsel reflecting their original role as legal advisors.

When a client is faced with a legal issue and requires representation in litigation, he/she will approach a solicitor. The solicitor will make initial observations on the case and, should the case raise complex issues of law, engage a barrister to assist. The process of engaging a barrister is termed ”briefing the barrister”. A barrister is usually briefed by the solicitor. Whilst the Client is ultimately responsible for paying the barrister’s fees, the contract for services exists between the solicitor and barrister. As a result, even if the Client does not pay the solicitor, the solicitor is still responsible for paying the barrister. Furthermore, because the barrister contracts directly with the solicitor, the barrister does not usually deal directly with the client. In the rare circumstances when barrister and client meet, the solicitor is invariably present (Ross and MacFarlane 2007). As a result, the direct contact between the barrister and his client is minimised. This arrangement preserves the independence of the barrister from his/her client. In very rare cases, the client may contract directly with the barrister.

The barrister is responsible for the conduct of the case in Court. The barrister will prepare written submissions to the Court and augment those written submissions with oral argument. In cases which go to trial, the barrister will also present the evidence as well as examine and cross-examine witnesses. In short, the barrister is responsible for the case in Court and does work outside of Court which is ancillary.

\footnote{4}In fact, Rule 81 of the Barrister’s Rules 2001 (NSW) forbids a barrister from practising other than as a sole practitioner.
to this. The solicitor is responsible for running the administration of the case. This may involve conferring and obtaining information from the client, filing the necessary documents with the Court, and gathering documentary evidence.

Under most Split Profession systems, barristers are subject to strict rules of conduct. These rules are generally set by the Bar Association of that particular jurisdiction. The Bar Association is a professional association of barrister which may or may not be voluntary. The rules of Conduct for barristers in New South Wales are the *Barrister’s Rules* 2001 (NSW). In England, the Bar Standards Board regulates the conduct barristers through the *Code of Conduct of the Bar of England and Wales* 2004. Other jurisdictions have similar codes of conduct which impose binding rules on barristers. There are a number of rules which are common to barrister’s codes of conduct in different jurisdictions. One important rule, for example, which binds the conduct of barristers is the barrister’s paramount duty to the Court. A manifestation of this principle is Rule 25 of the NSW *Barrister’s Rules* and Rule 708 of the UK Code of Conduct. These rules impose the duty of frankness and candour upon the barrister by requiring that the barrister disclose any relevant precedent (i.e. a previously decided case) to the Court even if that precedent goes against the barrister’s own case. This rule emphasises the arm’s length nature of the barrister-solicitor-client relationship in that the barrister must be independent from the client. This idea will be captured in the model presented in Chapter 4 and discussed further in Chapter 5.

A number of countries such as Australia (but only in New South Wales and Queensland), England and Wales, South Africa and Hong Kong, employ the Split Profession system. Similar systems are also employed in Spain, where *Procuradores* mirror the role of the solicitor whilst *Abogado* mirror the role of the barrister, and in civil law countries such as Japan and France. Furthermore, in some jurisdictions which utilise a Fused Profession system, there may be an informal split whereby some practitioners specialise in roles akin to barrister and others specialise in roles akin to solicitors. This de facto arrangement is observed in countries such as Australia (Victoria and South Australia), Canada (excepting Quebec) and to some extent in the United States.

### 3.3 The Fused Profession

A Fused Profession structure is one where there is no distinction between solicitors and barristers. Instead, legal practitioners are known as either attorneys-at-law,
advocates or solicitor-advocates. By its strictest legal definition, an attorney is a “person appointed by another to represent or act in place of that person” (Butt, 2006). In the context of the Fused Profession system, the term ‘attorney’ is in fact a contraction of ‘attorney-at-law’ meaning a person appointed by another to represent/act in the place of that other with respect to his/her legal affairs. That is, an attorney acts the client’s legal representative. If the client engages the attorney for the purposes of litigation, the attorney combines the role of the solicitor and the role of the barrister. The attorney is responsible for conducting the necessary preparatory work and for advocating the client’s case in Court. Often, attorneys will specialise in either trial work or transactional work. Attorneys who specialise in trial work often take on a role similar to the barrister whilst attorneys who specialise in transactional work have a role more akin to solicitors. Attorneys generally practice in partnerships (called law firms) where attorneys of different specialisations pool their skills. Thus, if one attorney is inexperienced in a case he/she is called upon to act in, the attorney can seek the assistance of other attorneys in the same firm.

When a client is faced with a legal issue and requires representation in litigation, he/she will approach the attorney directly. If the attorney specialises in trial work, then the attorney will take conduct of the matter from start to finish. If not, the attorney may give conduct of the Court work to another attorney in the same firm but retain conduct of the matter in all other respects. The client pays the attorney’s fees directly to him/her even if the attorney gives conduct of the Court work to another attorney in the same firm.

Most countries without a British heritage tend to utilise a Fused Profession system. These include countries such as South Korea, Thailand, France and Argentina. However, a number of countries with a British heritage (and hence which inherited the English Split Profession), have also adopted a Fused Profession structure. These countries include the United States (although some practitioners will specialise), Singapore, Malaysia and some states in Australia (such as South Australia and Victoria).

### 3.4 Arguments for a Split Profession vs. a Fused Profession

Proponents of the Split Profession system argue that it promotes the independence of the barrister (who is freer of conflicts of interest compared to the solicitor), takes advantage of the division of labour and the advantages of specialisation, and
promotes the interests of justice (Commission, 1982). A Split Profession system means that the barrister has less contact with the client. Indeed, the barrister does not develop any long-term relationship with the client which prevents the barrister from being swayed by concerns over future relationships with the same client. Furthermore, the nature and volume of the work carried out by legal practitioners can necessitate the division of responsibility for different tasks amongst lawyers. The Split Professions facilitates this division of labour and can improve the efficiency of the system because each type of lawyer can specialise in his/her role (Commission, 1982).

The disadvantages of the Split Profession system are often the same advantages offered by proponents of the Fused Profession system. Critics of the Split Profession system argue that it increases the cost of obtaining legal services and, consequently, limits access to legal services (Commission, 1982). Furthermore they argue that there is too much rigidity in the system which can lead to inefficiencies (Commission, 1982).

The arguments in favour of a Fused Profession system are complementary to the criticism of the Split Profession system. Advocates of the Fused Profession system question the need for a distinction between solicitors and barrister (see, for example, Cohen, 1987). They consider that “in many cases, two lawyers are used where one lawyer would be sufficient and more economical” (Commission, 1982). Furthermore, they argue that the division of labour in the Split Profession system is not efficient which results in duplication of work (Commission, 1982). As such, proponents of the Fused Profession believe that the fusion of solicitor and barrister will improve social outcomes by eliminating the inefficiencies caused by the distinction.

For a more detailed treatment of the legal arguments for and against a Split Profession vs the Fused Profession, the interested reader is referred to Reeves (1986) book: Are Two Legal Professions Necessary?

\[\text{Footnote 5: see Remarks during Swearing-in Ceremony [1952] 85 CLR XI-XII per Dixon CJ}\]
4.1 Description of the Model

Consider a setting where two clients are involved in litigation. Each client values winning the litigation at $\pi_i$ for $i = \{1, 2\}$ and I normalise the value of losing to zero (0). Thus, $\pi_1$ represents the gain in value that Client 1 derives from winning the case over losing. $\pi_2$ is similarly defined for Client 2. I limit $\pi_i$ such that $\pi_1 \in [0, 1]$.

Each client has a justice value, $z_i \in [0, 1]$ which represents the inherent justice of client $i$’s case. If Client 1’s justice value is greater than Client 2’s justice value (i.e. $z_1 \geq z_2$), society believes that Client 1 should win the litigation.

4.1.1 Common Elements

In the litigation, the client seeks to convey information about his/her case to the judge. However, due to information barriers, the client can rarely convey that information directly to the judge. In reality, these information barriers arise because the client does not have the legal knowledge to convert his/her factual knowledge into a legal argument. In my model, I make the simple assumption that the clients cannot communicate directly with the judge. As a result of this assumption, the client must hire agents who are learned in the law to ‘translate’ the client’s knowledge of the facts into a legal argument that a judge can make a decision on. The Client, therefore, hires lawyers to act on his/her behalf in the case.

In acting for the Client, the lawyers exert effort on two tasks - the solicitor’s tasks and the barrister’s tasks. I define the solicitor’s tasks as the preparatory work necessary for litigation. This involves taking instructions from the client, preparing court documents and briefing the barrister. I define the barrister’s tasks as those tasks related to the oral argument of the case in Court. This may involve research on questions of law, preparation of written submissions and presenting oral submissions. For the purposes of this model, I do not insist on a strict delineation of the solicitor’s and the barrister’s tasks. Instead, the distinction serves to recognise that, whilst the attorney is acting alone, he/she in fact performs the same tasks as the solicitor.
and the barrister combined.

In this model, the lawyers are paid on a spec basis. This means they are only paid if the client is successful in the litigation. This type of arrangement is common practice and is provided for under legislation in many jurisdictions. For example, s323 of the Legal Profession Act 2004 (NSW) provides that a legal practitioner may conduct a matter on a conditional cost agreement where some or all of the legal costs are conditional on the successful outcome of the matter. s324 of the same Act provides that, in certain circumstances, the legal practitioner may apply an uplift fee to costs if there is a successful outcome. In this model, the lawyers are only paid if the Client wins the litigation. Let $X_i$ denote the payment that the lawyer acting for Client $i$ receives if his/her client if successful in the litigation. I normalise the payment that the lawyer receives if the Client loses to zero (0). As a result, $X_i$ represents the extra amount (i.e. the uplift fee) that the lawyer receives conditional on the client winning the case. This modelling set-up captures both cases where the lawyers apply an uplift fee and cases where the uplift fee is not applied.

As mentioned the client cannot communicate directly with the judge. As such, if both clients did not employ lawyers, then the judge obtains no information about the clients’ respective cases. Thus, the judge can only randomly award the case to one of the clients. That is, $Pr(1 \text{ wins} | e_1 = 0, e_2 = 0) = \frac{1}{2}$.

As defined previously, the Judge observes some message sent by the lawyers and, on the basis of that message, decides the case. However, in this model, I abstract away from the specific mechanisms of the judge’s decision. In this model, the probability that a Client wins is a function of the each client’s justice value and the effort exerted by each client’s lawyer. Define, therefore, a probability function: $F(z_1, z_2, e_1, e_2)$ where $e_i = e_i^s + e_i^b$ for $i \in \{1, 2\}$ as representing the Probability that Client $i$ wins. Necessarily, if the probability that Client 1 wins is given by $F(\bullet)$, then the probability that Client 2 wins is given by $1 - F(\bullet)$. I ignore the possibility of a tie.

This specification is a reduced form which captures the idea that, whilst a Judge observes messages satisfying the Monotone Likelihood Ratio Property in effort levels and in justice values, this does not guarantee that the Judges makes the correct decision. Instead, the message is simply some noisy signal of $z_1 + e_1$ where $e_1 = e_1^s + e_1^b$. In the extreme case, this message becomes coarse information on the Client’s justice value.

Whilst a general form probability function, $F(\bullet)$ can be used, this reduces the
tractability of model. As a result, I restrict the model to a linear probability function defined as:

$$F(\bullet) = Pr(\text{Client 1 wins}) = \begin{cases} 
0 & \text{if } k[(z_1 + e_1) - (z_2 + e_2)] \leq -\frac{1}{2} \\
1 & \text{if } k[(z_1 + e_1) - (z_2 + e_2)] \geq \frac{1}{2} \\
k[(z_1 + e_1) - (z_2 + e_2)] + \frac{1}{2} & \text{otherwise} \end{cases}$$

(1)

Note that, even if Client 1’s justice value is greater than Client 2’s justice value and the effort exerted by Client 1’s lawyer is greater than the effort exerted by Client 2’s lawyer, Client 1 is not guaranteed to win. There is an implicit stochasticity in the model which captures the possibility of error in the judge’s decision-making process.

4.1.2 The Attorney Model

In the Attorney system, the Attorney chooses the effort level that he/she exerts on each task: $e^{s,a}_i$ and $e^{b,a}_i$. The Attorney is paid on a spec basis meaning that he/she is paid is conditional on winning. In this model, the Attorney for Client $i$ is paid $X_i$ if Client $i$ wins and zero (0) otherwise.

The cost of effort function for the Attorney is a convex function of the effort he/she exerts on each task such that $C'(\bullet) \geq 0, C''(\bullet) \geq 0$. There is no reason that the cost of effort function is symmetric or quadratic in the effort for each task. The cost of effort function may take a more general form to account for possible interactions between the two tasks. However, that reduces the tractability of the model. As such, I have avoided the use of general forms here. I assume a specific functional form to the cost function for effort: $C(e^{t,a}_i) = \frac{1}{2}(e^{t,a}_i)^2$ for $t \in \{s, b\}$ and for $i \in \{1, 2\}$. As such, then cost of effort function for Client 1’s Attorney is given by: $C(e^{s,a}_1, e^{b,a}_1) = \frac{1}{2} \left[ (e^{s,a}_1)^2 + (e^{b,a}_1)^2 \right]$.

The timing of the Attorney model is as follows:

**Stage 1** The clients simultaneously make decisions about the wage, $X_i$ that they will offer to their attorney.

**Stage 2** The attorneys observe the wage offered to them by their clients and make decisions on the effort that he/she will exert: $\{e^{s,a}_i, e^{b,a}_i\}$.

**Stage 3** The judge makes a decision based on the message that he/she receives from the Attorneys.

**Stage 4** Payoffs are realised.
4.1.3 The Solicitor-Barrister Model

In the Solicitor-Barrister system, the Solicitor and the Barrister specialise in performing separate task. Accordingly, they each perform the task they have specialised in. The Solicitor for Client $i$ chooses his/her effort level, $e_{s,i}^{s,ab}$, on the "solicitor’s task" and the Barrister choose his/her effort level, $e_{b,i}^{b,ab}$, that he/she exerts on the barrister’s task.

Both the Solicitor and the Barrister are paid on a spec basis. Under the Solicitor-Barrister system, the Client provides incentives directly to the Solicitor. The Solicitor then contracts with and pays the barrister. In this model, the Solicitor for Client $i$ is paid $X_i$ if Client $i$ wins and zero (0) otherwise. Similarly, the Solicitor offers a contract to the Barrister where the Barrister is paid $Y_i$ if Client $i$ wins and zero (0) otherwise.

The timing of the model is as follows:

**Stage 1** The clients simultaneously make decisions about the wage, $X_i$, that they will offer to their solicitor.

**Stage 2** The solicitors observe the wage offered to them by their clients and make decisions on the effort he/she will exert: $e_{s,i}^{s,ab}$. The solicitor also makes a decision about the wage contract, $Y_i$, to offer to the barrister.

**Stage 3** The barristers observe the wage offered to them by the solicitor and the effort level exerted by the solicitor. The barrister then makes a decision on the effort level that he/she exerts: $e_{b,i}^{b,ab}$. The message that the judge observes is then realised.

**Stage 4** The judge observes the message and makes a decision based on the signals.

If $q_1 \geq q_2$, Client 1 wins. Client 2 wins otherwise.

**Stage 5** Payoffs are realised.

4.2 Analysis of the Model

Consider a Subgame Perfect Nash Equilibrium that is characterised by a sequence of wage contracts and efforts set by each Client and each lawyer:

$$\left( \{X_1, Y_1, e_{s,1}^{s,a}, e_{b,1}^{b,a}\}, \{X_2, Y_2, e_{s,2}^{s,a}, e_{b,2}^{b,a}\} \right)$$

In the case of the attorney system, $Y_1 = Y_2 = 0$.

In equilibrium, all agents (clients, attorneys, solicitors and barristers) make optimal
decisions based on the anticipation of the sequence of wage contracts and efforts. In equilibrium, the anticipated sequence of wages and efforts is in fact the sequence that is realised. Under both the Attorney Model and the Solicitor-Barrister model, the model is solved by Backward induction.

**Lemma 1:** There exists values $\bar{k} \geq \bar{k} > 0$ such that the equilibrium of this model is a unique interior equilibrium if $\bar{k} \geq k \geq \underline{k}$

**Proof:** See Appendix A

Now, assume that $\bar{k} \geq k \geq \underline{k}$ for the analysis which follows. It then follows that, using Lemma 1, an interior equilibrium exists and that it is unique. I focus on this interior equilibrium in the following analysis.

### 4.2.1 The Attorney Model

Client 1’s solves the following problem:

$$\max_{X_1, e_1^s, e_1^b} \left[ k \left[ (z_1 + e_1) - (z_2 + e_2) \right] + \frac{1}{2} (\pi_1 - X_1) \right]$$

s.t.

$$e_1 = e_1^s + e_1^b$$

$$(e_1^s, e_1^b) \in \left( \bar{k} \left[ (z_1 + e_1) - (z_2 + e_2) \right] + \frac{1}{2} \right) X_1 - \frac{1}{2} \left( (e_1^s)^2 + (e_1^b)^2 \right)$$

(1)

For completeness, I recognise that there may be an outside option, $U_0$ for the Attorney. However, and without loss of generality, I assume that the outside option is worthless (i.e. $U_0 = 0$). This means that the Attorney always participates in the scheme.

Suppose now, that an interior equilibrium exists. If so, then the model can be solved as follows:

Using Backward Induction, solve the Attorney’s problem and obtain the following First Order Conditions:

$$k X_1 = e_1^s$$

$$k X_1 = e_1^b$$

(3)

(4)
Note that the Attorney’s objective function is concave in both $e_1^a$ and $e_1^b$. As such, the solutions to the First Order Conditions above will be maxima of the objective function.

Substituting Equations (3) and (4) for the Incentive Compatibility Constraint (IC) in the Client’s problem (Equation 2) means that the Client’s optimal choice of $X_1$ is given by:

$$X_1^* = \frac{2k^2\pi_1 - k(z_1 - z_2) + ke_2 - \frac{1}{2}}{4k^2} \tag{5}$$

Again, note that the client’s objective function is concave in $X_1$. Therefore, the solution to the Client’s problem is a maximum.

Substituting Equation (5) into Equations (3) and (4) yields:

$$e_1^* = e_1^a* + e_1^b* = \frac{2k^2\pi_1 - k(z_1 - z_2) + ke_2 - \frac{1}{2}}{2k} \tag{6}$$

By Symmetry:

$$e_2^* = e_2^a* + e_2^b* = \frac{2k^2\pi_2 - k(z_2 - z_1) + ke_1 - \frac{1}{2}}{2k} \tag{7}$$

Solving Equations (9) and (10) simultaneously yields an Subgame Perfect Nash Equilibrium in the form $\left( \left( e_1^{a,*}, e_1^{b,*}, X_1^* \right), \left( e_2^{a,*}, e_2^{b,*}, X_2^* \right) \right)$. For the specified functional forms, the SPNE is:

$$\begin{pmatrix}
\frac{2k(2\pi_1+\pi_2)-(z_1-z_2)}{6k}, & \frac{2k(2\pi_1+\pi_2)-(z_1-z_2)}{6k}, & \frac{2k(2\pi_1+\pi_2)-(z_1-z_2)}{6k} \\
\frac{2k(2\pi_1+\pi_2)-(z_2-z_1)}{6k}, & \frac{2k(2\pi_2+\pi_1)-(z_2-z_1)}{6k}, & \frac{2k(2\pi_2+\pi_1)-(z_2-z_1)}{6k}
\end{pmatrix} \tag{8}$$
4.2.2 THE SOLICITOR-BARRISTER MODEL

Client 1 solves the following problem:

\[
\begin{align*}
\max_{x_1, y_1, e_1^a, e_1^b} & \left[ k [(z_1 + e_1) - (z_2 + e_2)] + \frac{1}{2} \right] (\pi_1 - x_1) \\
\text{s.t.} & \\
& e_1 = e_1^a + e_1^b \\
& (e_1^a, y_1) \in \left( k [(z_1 + e_1) - (z_2 + e_2)] + \frac{1}{2} \right) x_1 - y_1 - \frac{1}{2} \left( (e_1^a)^2 \right) \quad \text{ (Solicitor’s IC)} \\
& (e_1^b) \in \left( k [(z_1 + e_1) - (z_2 + e_2)] + \frac{1}{2} \right) y_1 - \frac{1}{2} \left( (e_1^b)^2 \right) \quad \text{ (Barrister’s IC)}
\end{align*}
\] (9)

Again, I recognise that there may be an outside option \( U_0 \) for both the solicitor and the barrister. However, I again rely on the assumption that the outside option is of no value (i.e. \( U_0 = 0 \)). This means that both the solicitor and barrister always participate in the scheme.

I also focus, again, on an interior solution for values of \( k \) satisfying Lemma 1.

Using Backward Induction, solve the Barrister’s problem first and obtain the First Order Conditions:

\[
\begin{align*}
kY_1 &= e_1^b \\
\end{align*}
\] (10)

Substituting Equation (15) into the Solicitor’s problem means that the Solicitor’s optimal choices are given by the following First Order Conditions:

\[
\begin{align*}
k (X_1 - Y_1) &= e_1^a \\
k^2 X_1 - \left[ k [(z_1 + e_1^a + 2ky_1) - (z_2 + e_2)] + \frac{1}{2} \right] = 0
\end{align*}
\] (11) (12)

Using Equations (11) and (12), and the barrister’s optimal choice given in Equation (10), solve the Client’s problem. The Client’s optimal choices are given by the following First Order Condition

\[
X_1 = \frac{k^2 \pi_1 - k (z_1 - z_2) + ke_2 - \frac{1}{2}}{2k^2}
\] (13)
The optimal choice of effort for the lawyers is given by:

\[
e_1 = \frac{k^3 \pi_1 - k (z_1 - z_2) + ke_2 - \frac{1}{2}}{2k} \tag{14}
\]

By Symmetry:

\[
e_2^* = \frac{k^2 \pi_2 - k (z_2 - z_1) + ke_1 - \frac{1}{2}}{2k} \tag{15}
\]

Solving Equations (14) and (15) simultaneously yields an Subgame Perfect Nash Equilibrium in the form \( (e_1^{s,ab,*}, e_1^{b,ab,*}, X_1^*, Y_1^*), (e_2^{s,ab,*}, e_2^{b,ab,*}, X_2^*, Y_2^*) \). For the specified functional forms, the SPNE is:

\[
\left( \begin{array}{c}
\frac{k(\pi_1 - \pi_2) + (z_1 - z_2) + \frac{3}{k}}{3}, \\
\frac{k^2(2\pi_1 + \pi_2) - k(z_1 - z_2) - \frac{3}{k}}{3}, \\
\frac{k(\pi_2 - \pi_1) + (z_2 - z_1) + \frac{3}{k}}{3}, \\
\frac{k^2(2\pi_2 + \pi_1) - k(z_2 - z_1) - \frac{3}{k}}{3}
\end{array} \right), 
\left( \begin{array}{c}
\frac{k(2\pi_2 + \pi_1) - 2z_1 - z_2 - \frac{3}{k}}{3}, \\
\frac{k(2\pi_2 + \pi_1) - 2z_1 - z_2 - \frac{3}{k}}{3}, \\
\frac{k(2\pi_1 + \pi_2) - 2z_2 - z_1 - \frac{3}{k}}{3}, \\
\frac{k(2\pi_1 + \pi_2) - 2z_2 - z_1 - \frac{3}{k}}{3}
\end{array} \right) \tag{16}
\]

4.3 Equilibrium

4.3.1 Characterisation of the Equilibrium

**Proposition 1**: Given parameters \((k, z_1, z_2, \pi_1, \pi_2)\) and additively separable quadratic cost functions, there is exists a Unique Subgame Perfect Nash Equilibrium is Characterised by:

In the Attorney Model, the Subgame Perfect Nash Equilibrium in the form:

\[
( (e_1^{s,a,*}, e_1^{b,a,*}, X_1^*), (e_2^{s,a,*}, e_2^{b,a,*}, X_2^*) )
\]

is:

\[
\left( \begin{array}{c}
\frac{2k(2\pi_1 + \pi_2) - (z_1 - z_2) - \frac{3}{k}}{6}, \\
\frac{2k(2\pi_2 + \pi_1) - (z_2 - z_1) - \frac{3}{k}}{6}, \\
\frac{2k(2\pi_2 + \pi_1) - (z_2 - z_1) - \frac{3}{k}}{6}, \\
\frac{2k(2\pi_2 + \pi_1) - (z_2 - z_1) - \frac{3}{k}}{6}
\end{array} \right)
\]
In the Solicitor-Barrister Model, the Subgame Perfect Nash Equilibrium in the form:

\[
\begin{pmatrix}
  (e_1^*, e_2^*) \\
  (X_1^*, Y_1^*) \\
  (e_2^*, e_2^*) \\
  (X_2^*, Y_2^*)
\end{pmatrix}
\]

is:

\[
\begin{pmatrix}
  \frac{k(\pi_1 + \pi_2) + (z_1 - z_2) + \frac{3}{2}}{3}, & \frac{k(2\pi_2 + \pi_1) - 2(z_1 - z_2) - \frac{3}{2}}{3} \\
  \frac{k^2(\pi_1 + \pi_2) - k(z_1 - z_2) - \frac{3}{2}}{3}, & \frac{k(2\pi_2 + \pi_1) - 2(z_1 - z_2) - \frac{3}{2}}{3} \\
  \frac{k(\pi_2 - \pi_1) + (z_2 - z_1) + \frac{3}{2}}{3}, & \frac{k(2\pi_1 + \pi_2) - 2(z_2 - z_1) - \frac{3}{2}}{3} \\
  \frac{k^2(2\pi_1 + \pi_2) - k(z_2 - z_1) - \frac{3}{2}}{3}, & \frac{k(2\pi_1 + \pi_2) - 2(z_2 - z_1) - \frac{3}{2}}{3}
\end{pmatrix}
\]

(18)

**Proof:** See Appendix B

### 4.3.2 Main Results

The main result of this model is that, under the Attorney system, more effort is exerted but incentives are not always higher. To analyse this result, define \( e_1^a = e_1^{s,a} + e_1^{b,a} \) as the total effort exerted by the Attorney and let \( e_1^{sb} \) be similarly defined for the Solicitor-Barrister team. Using the results from Proposition 1,

\[
\text{Total Effort Under Attorney System : } e_1 = \frac{2k(2\pi_2 + \pi_1) - (z_1 - z_2) - \frac{3}{2}}{3}
\]

\[
\text{Total Effort Under Solicitor-Barrister System : } e_1 = \frac{k(2\pi_1 + \pi_2) - (z_1 - z_2) - \frac{3}{2}}{3}
\]

(19)

It is also useful to decompose this result into effort on the two tasks and compare these. The Solicitor will exert more effort compared to the barrister (i.e. \( e_1^{s,sb} \geq e_1^{b,sb} \)) if:

\[
(z_1 - z_2) - k\pi_2 + \frac{3}{2k} \geq 0
\]

(20)

The Attorney exerts more effort on the solicitor’s tasks if (i.e. \( e_1^{s,a} \geq e_1^{s,ab} \)) if:

\[
\frac{4k^2(\pi_1 + 2\pi_2) - 6k(z_1 - z_2) - 9}{12k}
\]

(21)

Similarly, the Attorney exerts more effort on the barrister’s tasks compared to the
Barrister (i.e. $e_{1}^{b,a} \geq e_{1}^{b,sb}$) if:

$$\frac{4k^{2}\pi_{1} - \pi_{2} + 6k(z_{1} - z_{2}) + 9}{12k}$$  \hspace{1cm} (22)

Comparing the level of incentives:

Total Incentives Under Attorney System : $X_{1} = \frac{2k(2\pi_{1} + \pi_{2}) - (z_{1} - z_{2}) - \frac{3}{2}}{6k}$

Total Incentives Under Solicitor-Barrister System : $X_{1} = \frac{k^{2}(2\pi_{1} + \pi_{2}) - k(z_{1} - z_{2}) - \frac{3}{2}}{3}$  \hspace{1cm} (23)

Examining Equations (30) above, the comparison of the incentives levels is not unambiguous. As such, there exist parameter such that the effort level exerted by the Attorney is greater than the effort level of the solicitor and barrister but the level of incentives provided are less.

The basic logic and intuition behind this model will be explored in detail in Chapter 5. The policy implications of these results are discussed in Chapter 6.

4.4 Robustness Check

The results of this model are robust under different specifications of the Probability Function, $F(\bullet)$. Under this check, I solve the model using the following specification:

$$F(z_{1}, z_{2}, \pi_{1}, \pi_{2}) = k\left[ z_{1}(1 + e_{1}^{s} + e_{1}^{b}) - z_{2}(1 + e_{1}^{s} + e_{1}^{b}) \right] + \frac{1}{2}$$

Under this specification, the Subgame Perfect Nash Equilibrium are characterised by:

Attorney Model

$$\begin{pmatrix}
\frac{k(z_{2}^{2}\pi_{1} - z_{2}^{2}\pi_{2} + (z_{1} - z_{2}) - \frac{3}{2}}{3z_{2}}, & \frac{k(z_{1}^{2}\pi_{2} + 2z_{1}^{2}\pi_{2}) - 2(z_{1} - z_{2}) - \frac{3}{2}}{3z_{1}} \\
\frac{k(2z_{2}^{2}\pi_{1} + z_{2}^{2}\pi_{2}) - (z_{1} - z_{2}) - \frac{3}{2}}{3kz_{1}^{2}}, & \frac{k(z_{1}^{2}\pi_{1} + 2z_{1}^{2}\pi_{2}) - 2(z_{1} - z_{2}) - \frac{3}{2}}{3kz_{1}^{2}}
\end{pmatrix}$$  \hspace{1cm} (24)

Solicitor-Barrister Model:

$$\begin{pmatrix}
\frac{k(z_{2}^{2}\pi_{2} - z_{2}^{2}\pi_{1}) + (z_{2} - z_{1}) - \frac{3}{2}}{3z_{2}}, & \frac{k(z_{2}^{2}\pi_{2} + 2z_{2}^{2}\pi_{1}) - 2(z_{2} - z_{1}) - \frac{3}{2}}{3z_{2}} \\
\frac{k(2z_{2}^{2}\pi_{2} + z_{2}^{2}\pi_{1}) - (z_{2} - z_{1}) - \frac{3}{2}}{3kz_{2}^{2}}, & \frac{k(z_{2}^{2}\pi_{1} + 2z_{2}^{2}\pi_{1}) - 2(z_{2} - z_{1}) - \frac{3}{2}}{3kz_{2}^{2}}
\end{pmatrix}$$  \hspace{1cm} (25)
A more detailed proof of the results is shown in Appendix C.

Compare Equations (24) and (25) to the Equilibrium expressed in Proposition 1 above. In Equations (24) and (25) above, only total effort \((e_i)\) and the incentives provided by the client \((X_i)\) are reported. Notice that changing the probability function, \(F(\bullet)\) has not changed the core results of the model. Total effort is still higher under the Attorney system whilst incentives are not necessarily higher.

The qualitative results of under this specification do not change from the additive specification. As a result, I continue the analysis of this model using the results from the additive specification.
5.1 SUMMARY OF THE CORE INTUITION

The main result of this model is that, under the attorney system, more effort is exerted but incentives are not always higher. There are two complementary explanations for this result. Firstly, there is inefficient division of labour in the Solicitor-Barrister system as a result of the dual role played by the incentives, \( Y_i \). These incentives, given by the Solicitor to the Barrister, serve two purposes: 1) to control the Barrister’s effort level; and 2) divide the surplus from the Client’s incentives. As a result, the solicitor faces a trade-off between taking a larger portion of the surplus for him/herself but inducing less effort from the barrister or paying a larger surplus to the barrister and inducing more effort but only obtaining a smaller portion of the surplus. This trade-off results in an inefficient allocation of effort between the barrister and the solicitor. The second explanation is that the addition of the Solicitor in the Solicitor-Barrister relationship creates a separating boundary between the Client and the Solicitor. The Solicitor’s presence creates a double marginalisation effect on the client’s incentives. This reduces the impact of incentives on the Barrister. As a result, the Barrister, compared to the Attorney, is not as easily influenced by the incentives that the Client provides. This implies that the barrister exerts less effort for the same amount of incentives provided. This reduced ability of the client to influence the barrister captures the independence of barristers which is a common feature of the legal literature. This Chapter discusses the intuition behind the main result in this model and relates the results to the legal literature.

5.2 THE CORE INTUITION

5.2.1 EFFORT IN THE TWO SYSTEMS

Define \( e^a_1 = e^{s,a}_1 + e^{b,a}_1 \) as the total effort exerted by the Attorney and let \( e^{sb}_1 \) be similarly defined for the Solicitor-Barrister team. Equation (19), which is repeated below for convenience, compares the total effort of the attorney against the total
effort of the solicitor and barrister.

\[
\text{Total Effort Under Attorney System} : \quad e_1 = \frac{2k(2\pi_1 + \pi_2) - (z_1 - z_2) - \frac{3}{2}}{2}
\]

\[
\text{Total Effort Under Solicitor-Barrister System} : \quad e_1 = \frac{k(2\pi_1 + \pi_2) - (z_1 - z_2) - \frac{3}{2}}{3} \quad (19)
\]

Equation (19) shows that total effort under the Attorney system is always more than the total effort under the Solicitor-Barrister system.

Effort from the Barrister and effort from the Solicitor are substitutes in the probability function, \( F(\bullet) \). The client is not concerned with the origin of the effort (i.e. whether it is the solicitor who exerts more effort or the barrister) since only total effort is important. Accordingly, it is the lawyers who choose how to allocate effort between the Solicitor’s tasks and the Barrister’s tasks. In the Attorney system, the Attorney makes the decisions on how much effort to allocate to each task simultaneously. The Attorney makes an efficient allocation of effort because he/she sets the marginal cost of each task equal to the marginal benefit of each task. However, in the Solicitor-Barrister system, the division of labour is determined by the Solicitor through the use of the incentives, \( Y_i \). The incentive payment, \( Y_i \), determines the division of labour because it determines the division of the surplus. As the amount of incentives increases, the Solicitor elicits more effort from the barrister. Since effort from the solicitor is a perfect substitute for effort from the barrister under the additive specification, less effort is required from the Solicitor.

The effort exerted by the solicitor \( (e_s) \) is decreasing in the incentive level \( Y_1 \). This comparative static is intuitive because effort is costly to the Solicitor. Therefore, the Solicitor will incentivise the Barrister to exert effort as a substitute to the Solicitor’s effort. However, there is also a trade-off because increasing the incentive payment decreases the solicitor’s payoff by the marginal increase in incentives multiplied by the associated increase in the probability of winning. Therefore, the solicitor will substitute between incentives, which induce the Barrister’s effort, and his/her own effort such that the marginal cost of each equates.

5.2.2 The Dual Role of the Solicitor’s Incentives, \( Y_i \)

The Incentives provided by the Solicitor to the Barrister plays two roles in the model. Firstly, it induces effort from the barrister. As the level of incentives increases, the barrister exerts more effort. This is apparent from an examination of the barrister’s optimal choice of effort: \( kY_1 = e_b^1 \) (Equation (10)). The second effect
of the Incentives provided by the Solicitor is to divide the incentives provided by the client. If the Solicitor provides the Barrister with incentives $Y_1$, it must follow that the Solicitor retains $X_1 - Y_1$ conditional on Client 1 winning the case. Thus, $Y_1$ effectively determined the proportion of the surplus that is given to the Barrister.

The two roles played by the Incentive payment $Y_i$ creates a trade-off for the Solicitor. On one hand, the Solicitor wishes to increase his/her payoff by retaining a larger portion of the incentives. The Solicitor does this by reducing the incentive payment. However, that means that he/she induces less effort from the Barrister and must compensate for this by increasing the amount of effort that he/she exerts. Effort is, however, costly for the Solicitor. On the other hand, the Solicitor can avoid exerting more effort (and consequently avoid the cost of effort) by inducing more effort from the Barrister. In order to induce effort from the Barrister, the Solicitor must give a larger portion of the incentives to the Barrister (i.e increasing $Y_1$). This means that the Solicitor retains a smaller proportion of the surplus. Thus, when deciding between these two alternatives, the Solicitor equates the sum of his marginal cost of effort and the marginal increase in the surplus he/she receives equal to the marginal effect of the Barrister’s effort on the surplus the solicitor receives. Equation (26), below, represents the Solicitor’s optimal choice of the incentive level $Y_1$ (for Client 1’s solicitor), illustrating this trade-off:

$$\frac{k^2(X_1 - Y_1)}{\text{Change in surplus received}} - \left[ k \left[ (z_1 + e_1^i + kY_1) - (z_2 + e_2) \right] + \frac{1}{2} \right] = 0 \quad (26)$$

An additional layer of complexity is added when the Solicitor accounts for the certainty of the costs and the uncertainty of payoffs. In this model, the Solicitor incurs the cost of exerting effort upfront and for certain. On the other hand, the Solicitor is only paid the incentive if Client 1 wins the case. Excluding corner solutions, there is always a probability that Client 1 could lose the case and the Solicitor will not be paid. As a result, the Solicitor only obtains an increase in the probability of winning and, correspondingly, an increase in the expected payoff for an increase in his/her own effort. On the other hand, he/she is certain to incur the increase in costs associated with that increase in his/her own effort. On the other hand, if the Solicitor uses incentives to induce more effort from the Barrister in substitution of his/her own effort, the Solicitor only incurs an increase in the expected payment of that incentive to the Barrister because the incentive payment is contingent on Client 1 winning. Note, the expected payment of that incentive increases from two effect: 1) the direct effect of increasing $Y_1$; and 2) the indirect
effect of inducing more effort from the Barrister which increases the probability that Client 1 wins, hence that $Y_1$ must be paid. Since the Solicitor saves on the costs of his/her own effort, which would have been incurred for certain, the Solicitor will choose to substitute away from his/her own effort when the marginal cost of that effort exceeds the marginal net benefit of providing incentives.

Furthermore, the Solicitor enjoys some free-riding when using incentives to induce effort from the Barrister. Increasing the level of incentives, $Y_1$, increases the expected payment to the Barrister because it increases the amount paid and the probability with which it is paid. At the same time, the Solicitor saves the cost of effort which is incurred with certainty. This is the main trade-off on which the Solicitor makes his/her decision on how much effort to exert and how much incentive to provide. However, increasing incentives also has the indirect effort of increasing the probability with which the Solicitor is paid $X_1 - Y_1$. Since the Barrister’s effort increases the probability that Client 1 wins, it therefore increases the probability with which the Solicitor is paid $X_1$ by the Client and the probability with which the Solicitor pays the Barrister $Y_1$. That necessarily means that the increases in the Barrister’s effort increases the probability with which the Solicitor retains the remainder of the surplus $X_1 - Y_1$. Since the cost of effort is incurred by the Barrister but the benefit accrues to the Solicitor, there is an externality arising from the Barrister’s effort. Since the Solicitor obtains the benefit of this externality without incurring the cost, he/she can free-ride off the Barrister’s effort.

5.3 Division of Labour

The externalities resulting from the Solicitor’s choice of $Y_i$ imply that the division of labour in the Solicitor-Barrister system is inefficient. On the other hand, the Attorney system achieves a division of labour closer to the social optimal. To analyse the The Social Planner faces the following problem:

$$\max_{e_s^i, e_b^i} \left[ k \left[ (z_i + e_s^i + e_b^i) - (z_{-i} + e_{-i}) \right] + \frac{1}{2} (\pi_i) - \frac{1}{2} \left( (e_s^i)^2 + (e_b^i)^2 \right) \right]$$  \hspace{1cm} (27)$$

The Solution to this problem is:

$$k \pi_i = e_s^i$$ \hspace{1cm} (28A)  
$$k \pi_i = e_b^i$$ \hspace{1cm} (28B)
By comparing Equations (28A) and (28B) to the Equations (3) and (4) in Chapter 4, and noting that $\pi_i > X_i$, note that the optimal level of effort is greater than the amount of effort put in by the Attorney. However, from Equation (19), the effort level of the Solicitor-Barrister team is less than the effort level of the Attorney. Therefore, there is less effort exerted under the Solicitor-Barrister system than optimal. In fact, the Solicitor-Barrister system does worse than the Attorney system in terms of achieving the socially optimal level of effort.

The Attorney system more efficiently allocates effort between the solicitor’s tasks and the barrister’s tasks because the Attorney’s problem emulates the Social Planner’s problem. Note that I do not claim that the Attorney’s decision concerning effort is the same as the Social Planner’s. Indeed, there is a fundamental difference in the objective function of the Attorney (who maximises the probability of Client $i$ winning multiplied by the incentive payment $X_i$ less the cost) and the objective function of the Social Planner (who maximises the probability of Client $i$ winning multiplied by the payoff to Client $i$ winning less the cost of effort). This can be seen if the Attorney’s problem (see Equations (B1) in Appendix B) is compared with the Social Planner’s problem (see Equation (27) above). However, the Attorney’s problem emulates the Social Planner’s in the sense that the Attorney, like the Social Planner, chooses effort simultaneously. Therefore, whilst the Attorney system more efficiently allocates effort between the two tasks, it does not achieve the socially efficient level of effort.

The reason that the Attorney system achieves a more efficient allocation of effort across both tasks is because the Attorney is not subject to the distortive effects of the incentive payment $Y_i$. Under the Attorney system, the Attorney makes decisions on $e^*_s$ and $e^*_b$ simultaneously. Furthermore, under the additive specification I consider, the Attorney can frictionlessly substitute between the two tasks. The Attorney equates the marginal cost of effort of each task and, thus, accords equal effort to each task. On the other hand, the effect of $Y_i$ on the Solicitor’s behaviour distorts the efficient allocation of effort across both tasks because the Solicitor free-rides off the Barrister’s effort. Using Equation (29), if the probability that Client 1 will win the case increases due to increases in parameters exogenous to the model, the Solicitor prefers to give the Barrister fewer incentives in order to keep a larger portion of the surplus to herself. The solicitor will only exert more effort than the barrister is the condition in Equation (29) is satisfied.

However, a more efficient division of labour does not imply that the Attorney system
is a better structure for the legal profession. The Solicitor-Barrister system provides better outcomes in terms of preserving the independence of the lawyers.

5.4 Who works harder: The Solicitor or the Barrister

Under certain conditions, the Solicitor will exert more effort than the Barrister. The Solicitor will exert more effort (i.e. \( e_{s}^{s,b} \geq e_{b}^{b,sb} \)) if:

\[
(z_1 - z_2) - k\pi_2 + \frac{3}{2k} \geq 0
\]  

(29)

Whilst Equation (29) offers no conclusive statement on whether \( e_{s}^{s,b} \) is always larger than \( e_{b}^{b,sb} \) (or vice-versa), it does offer some interesting comparative statics. For example, it is more likely that, as \( z_1 - z_2 \) decreases, the Solicitor will substitute away from his/her own effort to providing incentives to the Barrister. That is, as \( z_1 - z_2 \) decreases, the Solicitor will exert less effort and give more incentives to the Barrister for him/her to exert more effort. A fortiori, the Solicitor exerts less effort than the Barrister if \( z_1 - z_2 \) is negative (provided that \( k \) is small enough). The result is caused by the solicitor’s first-mover advantage. In this model, the solicitor moves first by chooses both her effort level and the level of incentives to give to the barrister. The barrister observes this and responds with a choice of effort which maximises his payoff. As a result, the solicitor can indirectly choose how labour is divided over the two tasks by choosing her effort level and indirectly choosing the barrister’s level of effort through the incentive level. As such, the solicitor is able to choose how surplus is divided between the lawyers. If the probability of Client 1 winning is small (i.e. \( z_1 - z_2 \) is small or negative or \( \pi_2 \) is large), the Solicitor substitutes away from the cost of exerting effort, which is incurred for certain, to the cost of incentivising the Barrister which is only incurred when Client 1 wins. As the probability that Client 1 wins decreases, the expected cost of incentivising the Barrister decreases. Since the barrister is the second-mover and bound by the choice of incentives that the solicitor gives, the barrister can only best-respond to those incentives. As a result, the solicitor is able to expropriate some surplus in the relationship.

It is interesting to note here that, if the case is difficult to win, then the barrister earns more surplus from the solicitor because the solicitor substitutes away from effort to incentives. On the other hand, if the case is easy to win, then the solicitor earns more surplus and exerts more effort. The intuition behind this result is related to the comparative static discussed above. If the case is easier to win, the solicitor
is more likely to be paid the incentive. Therefore, she does not give the barrister as much incentive payment because she wishes to preserve a larger proportion of the surplus to herself. The opposite is true if the case is difficult to win. This result accords with real world observations. In reality, the solicitor may refer a difficult case to the barrister. This occurs because the solicitor may not have the expertise to construct complex legal arguments to assist the client’s case. As such, she refers this work to the barrister.

5.5 No Mere Mouthpiece - Independence of the Lawyer

For any given set of parameters \((z_1, z_2, \pi_1, \pi_2)\), the total effort exerted under the Attorney system is always higher than the effort exerted under the Solicitor-Barrister system. By inspecting Equation (27), it is clear that the reason that the Attorney exerts more effort than the Solicitor and Barrister is because the Attorney is more responsive to the clients payoffs to winning. This means that the Attorney is more responsive to the incentives provided by the client since incentives are not necessarily higher under the Attorney system (see Equation (30) below). Since incentives are an increasing function of the payoff to the client from winning (i.e. \( \frac{\partial X_i}{\partial \pi_i} \geq 0 \)), the more sensitive the lawyer is to the payoff to the client from winning, the more sensitive the lawyer is to incentives.

\[
\text{Total Incentives Under Attorney System} : \quad X_1 = \frac{2k(2\pi_1+\pi_2)-(z_1-z_2)-\frac{3}{k}}{6k} \\
\text{Total Incentives Under Solicitor-Barrister System} : \quad X_1 = \frac{k^2(2\pi_1+\pi_2)-k(z_1-z_2)-\frac{3}{k}}{3} \\
\]

The reason that the Solicitor and Barrister exert less effort (in total) compared to the Attorney is because they are less sensitive to the incentives provided by the Client. This is reflected in the Effort function for the Solicitor and Barrister as compared to the Attorney. Notice, from Equation (26) in Chapter 4, that the co-efficient on Client 1’s payoff \((\pi_1)\) in the Barrister’s and Solicitor’s effort function is smaller than the co-efficient on Client 1’s payoff in the the Attorney’s effort function for both the solicitor’s tasks and the barrister’s tasks. The following comparison draws that

\[\text{see } \text{(Lindsay and Webster, 2002)}\] and Rule 18, Barristers Rules 2001 (NSW)
difference further into focus:

\[
\begin{align*}
\frac{\partial e_{b,sb}^1}{\partial \pi_1} &= \frac{k}{3} & (31A) \\
\frac{\partial e_{s,sb}^1}{\partial \pi_1} &= \frac{k}{3} & (31B) \\
\frac{\partial e_{s,a}^1}{\partial \pi_1} &= \frac{\partial e_{b,a}^1}{\partial \pi_1} = \frac{2k}{3} & (31C)
\end{align*}
\]

Comparing Equation 31A and 31C, \( \frac{\partial e_{b,a}^1}{\partial \pi_1} \geq \frac{\partial e_{b,sb}^1}{\partial \pi_1} \) since \( k > 0 \).

The economic intuition behind this result is akin to a double marginalisation argument. In some sense, the Solicitor and the Barrister are vertically separated firms supplying legal services to the client. The Attorney represents a vertically integrated firm supplying both types of legal services to the Client. Borrowing from the Industrial Organisation literature (Spengler, 1950), the vertically separated firms earn less profit than the vertically integrated firm because each firm in the structure adds its own price-cost margin when it supplies to the downstream firms. Thus, the monopoly problem is faced incurred twice. In this model, however, the result is not, strictly, one of a double monopoly problem. However, it may assist the reader to conceptualise the logic in this context.

In this model, the solicitor and the barrister are less affected by the incentives of the client because of the solicitor’s expropriation of some of the surplus in the relationship through the use of the incentives \( Y_i \). In both the Solicitor-Barrister system and the Attorney system, the client does not provide efficient incentives because he/she does not provide the full benefit of the lawyer’s effort as the compensation (i.e. \( X_i \neq \pi_i \)). This occurs because the client expropriates some surplus from the relationship. This introduces an externality because the client receives some benefit at the expense of the lawyers. As a result, inefficient effort is exerted. However, in the Solicitor-Barrister system, this process is repeated again because the solicitor also expropriates some surplus from the relationship through the incentive \( Y_i \). As a result, the barrister is subjected to two expropriations of surplus – once from the client and once from the solicitor. As a result, the barrister receives lower incentives overall and is less affected by them compared to the solicitor and the attorney.

This result is consistent with the idea that attorneys zealously advocate on behalf of their client because their primary duty is to their client, whilst barrister and
solicitors take a more modest approach to advocacy because their primary duty is to the Court. The practice of American attorneys is dominated by the primary duty of zealous advocacy (Lanctot 1990). Indeed, in Walters v National Association of Radiation Survivors2 Rehnquist CJ stated:

Under our adversary system, the role of counsel is not to make sure the truth is ascertained, but to advance his client’s cause by any ethical means. Within the limits of professional propriety, causing delay and sowing confusion not only are his right, but may be his duty.

Walters v National Association of Radiation Survivors 473 U. S. 305 (1985) at 473 per Rehnquist CJ

Zitrin and Langford (1999) supports this view and presents anecdotal evidence of instances where the duty of zealous advocacy overrules other ethical considerations. Other authors support this view (see Simon 1988, Richmond 2002, Luban 1983). On the other hand, the duty of the barrister is first and foremost to the Court. The preamble to the Barrister Rules 2001 (NSW) states that ‘The administration of justice in New South Wales is best served by reserving the practice of law to officers of the Supreme Court who owe their paramount duty to the administration of justice’. This is supported by the comments made by Chief Justice Mason in Giannarelli v Wraith:

The performance by counsel of his paramount duty to the court will require him to act in a variety of ways to the possible disadvantage of his client. Counsel must not mislead the court, cast unjustifiable aspersions on any party or witness or withhold documents and authorities which detract from his client’s case. And, if he notes an irregularity in the conduct of a criminal trial, he must take the point so that it can be remedied, instead of keeping the point up his sleeve and using it as a ground for appeal.

It is not that a barrister’s duty to the court creates such a conflict with his duty to his client that the dividing line between the two is unclear. The duty to the court is paramount and must be performed, even if the client gives instructions to the contrary.

Giannarelli v Wraith (1988) 165 CLR 543 at 556-7 per Mason CJ

The difference in the two rules affecting the conduct of attorneys and barrister is reflected in the model through the effect of \( \pi_i \) on the effort levels of the attorney compared to its effect on the effort of the solicitor and the barrister. \( \pi_i \) represents the

\[ 473 \text{ U. S. 305 (1985) at 473} \]
payoffs to client i’s case. The degree to which the attorney’s or the barrister’s choice of effort is affected by $\pi_i$ represents the degree to which they zealously advocate the client’s case. The model makes predictions which are consistent with the reality that the solicitor and the barrister will advocate the client case less zealously than the attorney. As a result, the lawyers under the Solicitor-Barrister system are more independent than lawyers under the Attorney system.
Chapter 6
Justice and its Implications

6.1 What is Justice
6.1.1 The Jurisprudence of Justice

There is an extensive literature in the fields of sociology and legal philosophy which attempt to define justice. **Plato** (60BC), in his most famous *The Republic*, considered that Justice is achieved by allocating to each person what ought to rightfully be theirs. In contrast, **Rawls** (1971) understood justice to mean distributive justice and stated two principles of justice which he believed normatively described society. Rawls’ principles that ‘each person is to have an equal right to the most extensive basic liberty compatible with a similar liberty for others’ ([Rawls, 1971](#p60)) and that ‘Social and economic qualities are to be arranged so that they are both reasonably expected to be to everyones advantage and attached to positions and offices open to all’ ([Rawls, 1971](#p406)). Rawls reasoned that justice was that any departure from equality was only justified if it benefits the most disadvantages whilst preserving to everyone an equal right to the basic liberties. In contrast, **Mill** (1863), basing his work off **Bentham** (1823), advocated the Utilitarian principle of justice. This principle states that:

> The creed which accepts as the foundation of morals, Utility, or the Greatest Happiness Principle, holds that actions are right in proportion as they tend to promote happiness, wrong as they tend to produce the reverse of happiness. By happiness is intended pleasure, and the absence of pain; by unhappiness, pain, and the privation of pleasure. ([Mill, 1863](#p9))

Under the Utilitarian view, justice is achieved by jointly maximising the welfare of all citizens.

6.1.2 Justice in this Model

In this thesis, I abstract away from any legal or sociological notions of justice. In doing so, I adopt a basic definition of justice which suffices for the conclusions that this thesis attempts to reach. I define achieving justice as the legal system achieving the correct outcome. That is, if one party to litigation deserves to win, then that
party should win. In my model, the Clients’ justice values \((z_1, z_2)\) represent the amount of justice in Client 1’s case. Note that I do not require that the clients’ justice values are complements - that is, as that \(z_1\) and \(z_2\) move in opposite direction (i.e. \(\frac{\partial z_1}{\partial z_2} < 0, \frac{\partial z_2}{\partial z_1} < 0\)). My model is consistent with a case where both Clients justice values move in the same direction. This scenario would correspond to a case where both clients have legally and morally correct views and the ”correct” outcome is then determined by a matter of judicial interpretation. Formally, this means that \(z_1\) and \(z_2\) are independently and identically distributed.

In my model, justice is achieved when Client 1 wins only when \(z_1 \geq z_2\). Society wishes to maximise the probability that justice occurs at the least cost. However, in this Chapter, I ignore the costs aspects of this model for the time being. The reason for ignoring the costs aspect is to draw into focus the circumstances under which each system will achieve justice.

### 6.2 Achieving Justice under two systems

The probability that Justice will be achieved is given by the following formula:

\[
(Pr(1 \text{ wins}))Pr(z_1 > z_2) + (Pr(2 \text{ wins}))Pr(z_2 > z_1)
\]  

(32)

However, noting the Law of Large Numbers, the probability that \(z_1 > z_2\) is \(\frac{1}{2}\) (i.e \(Pr(z_2 > z_1) = \frac{1}{2}\)). As such, Equation (32) can be collapsed to:

\[
(Pr(1 \text{ wins}))Pr(z_1 > z_2)
\]

(33)

Since the case where Client 1 has the greater justice value and the case where Client 2 has the greater justice value are symmetric, I can restrict my analysis to only one case without any loss of generality.

Under the model outlined in Chapter 4 of this thesis, the probability that justice is achieved under the Attorney system is:

\[
Pr(1 \text{ wins}|z_1 \geq z_2) = \frac{k}{3}[2k(\pi_1 - \pi_2) + (z_1 - z_2)] + \frac{1}{2}
\]

(34)
The probability that justice is achieved under the Solicitor-Barrister System is:

\[ Pr(1 \text{ wins} | z_1 \geq z_2) = \frac{k}{3} [k(\pi_1 - \pi_2) + (z_1 - z_2)] + \frac{1}{2} \]  

(35)

Notice that the probability that justice is achieved under the Attorney system is more sensitive to the difference the two clients payoffs.

**Proposition 2:** Consider parameters of the model such that:

\[ z_1 > z_2 \quad \text{(P2 - A)} \]
\[ \pi_1 < \pi_2 \quad \text{(P2 - B)} \]

Under these parameters, the Solicitor-Barrister system is more likely to achieve social justice.

**Proof:** See Appendix D

Condition A of Proposition 2 states that Client 1s justice value is higher than Client 2s. This implies that justice is realised when Client 1 wins. Condition B of Proposition 2 states that Client 2 values winning more highly than Client 1. From the standpoint of achieving justice, society prefers Client 1 winning. However, Client 2s incentive or motivation to win is stronger than Client 1s because Client 2 has more at stake in the litigation. Accordingly, Client 2 is expected to incentivise his/her lawyers more strongly. However, strong incentives given to the lawyer(s) increases the degree to which the truth is distorted by the legal argument. Accordingly, it increases the probability that Client 2 wins (i.e. injustice occurs.).

The intuitive reason that the Solicitor-Barrister system is more likely to achieve social justice under these parameters is that the Solicitor-Barrister system is less sensitive to influence by the clients incentives. Mathematically, the Solicitor-Barrister system is more likely to achieve justice because \( \pi_1 - \pi_2 < 0 \). It follows that Equation 35 will be larger than Equation 34. This result occurs because the barrister is less affected by client incentives than the attorney and, given some restrictions on \( k \), the barrister is also less affected by incentives than the solicitor. Accordingly, the client anticipates this and provides the barrister with lower incentives. Overall, this induces less distortionary effort. Since Client 2, who has the larger payoff from winning the case, faces a higher marginal cost of inducing effort, he/she is less likely to use monetary incentives to manipulate the system. This means that
Client 2 chooses to induce a lower level of effort than under the Attorney system. Accordingly, the difference in effort level is less. When there is less difference in the effort level induced by each client, then the probability that justice occurs depends less strongly on the difference in payoffs and more strongly on the difference in the justice values. As a result, even though Client 1 has a lower payoff than Client 2, Client 1 becomes more likely to win the case than under the Attorney system.

**Proposition 3:** Consider parameters of the model such that:

\[
\begin{align*}
    z_1 &> z_2 \quad \text{(P3 - A)} \\
    \pi_1 &> \pi_2 \quad \text{(P3 - B)}
\end{align*}
\]

Under these parameters, the Attorney system is more likely to achieve justice than the Solicitor Barrister system.

**Proof:** See Appendix D

Condition A of Proposition 3 states that Client 1's justice value is higher than Client 2's. This implies that justice is realised when Client 1 wins. Condition B of Proposition 3 states that Client 1 also values winning more highly than Client 2.

In contrast to the scenario considered under Proposition 2, in this scenario society believes that the Client with the higher justice value, who also has the higher valuation for winning, should win. Since the Client with the higher justice value is more likely to induce more effort by his/her lawyer, the need to limit the Clients ability to manipulate the outcome of the litigation by giving high powered incentives to the lawyer. Accordingly, it does not matter that the probability that justice occurs is more sensitive to the clients payoffs than to the justice values. In fact, if the justice values and the payoffs are positively correlated (as is the case under Proposition 3), then, a fortiori, using a system where the probability of justice is strongly increasing in the payoffs is better than a system where the probability is less strongly increasing. For this reason, the Attorney system is better under there parameters.

### 6.3 Policy Implications - Capital Punishment

One possible way to think about the trade-off between the Attorney system and the Solicitor-Barrister system is in terms of Type I and Type II errors. These two
concepts are widely used in Hypothesis Testing in Econometric frameworks. In the Hypothesis testing framework, Type I error refers to the act of rejecting a Null Hypothesis that is in fact true. A Type II error arises when a false Null Hypothesis is not rejected. In legal terminology, a Type I error occurs when a miscarriage of justice occurs – an innocent person is wrongfully convicted. A Type II error occurs when an error of impunity is committed – failing to convict a guilty person. Under this model and assuming that $\pi_1 > \pi_2$, the Solicitor-Barrister system is more likely to avoid Type II errors but the Attorney system is more likely to avoid Type I errors. A Type I error occurs when Client 1's justice value is higher but Client 1 loses. A Type II error occurs when Client 1's justice value is lower but Client 1 wins. Type I errors and a Type II errors both result in injustice occurring. As a result, it is better for society to avoid both types of errors.

This type of analysis is not unknown to the literature. Polinsky and Shavell (1989) also examine Type I and Type II errors in litigation but they examine the effect of the probability that these errors occur on the decision to litigate and on the incentives of citizens to obey the law. In the analysis that follows, I show that the relative importance of Type I versus Type II error can influence the decision on which structure of the legal profession is most appropriate. In particular, I use the context of Capital Punishment to illustrate this trade-off.

Capital Punishment, otherwise known as the death penalty, is the imposition of the sentence of death upon a person found guilty of an offence. The importance of avoiding miscarriages of justice (Type I error) relative to errors of impunity (Type II error) in case where capital punishment is available is intuitive. The consequence of a Type I error is irrevocable since an executed person cannot be brought back to life and pardoned. However, the consequence to a Type II error is simply a retrial since the prosecution can re-open cases based on new evidence. This view is supported by the literature. Bennett (1958) suggest that recognises that the consequences of miscarriages of justice are irrevocable in cases of capital punishment. Gross (1998) and Palacios (1996) also support this view and conduct empirical analyses to support their argument.

My model predicts that the Attorney system is less likely to achieve injustice where the capital punishment is available but the Solicitor-Barrister system is more likely to achieve justice where the death penalty is not applicable. To illustrate this point, contrast California, USA where capital punishment is available, to New South Wales, Australia where capital punishment is not available.
6.3.1 THE LAW OF CAPITAL PUNISHMENT

§190(1) of the California Penal Code provides that:

Every person guilty of murder in the first degree shall be punished by death, imprisonment in the state prison for life without the possibility of parole, or imprisonment in the state prison for a term of 25 years to life.

Thus, a person found guilty of murder in the first degree (i.e. \textit{inter alia}, murder that is planned or premeditated)[§189 of the California Penal Code] may be subject to capital punishment.

However, under s431 of the \textit{Crimes Act 1900} (NSW), no person convicted of an offence in New South Wales can be sentenced to death. As such, the most severe punishment that can be inflicted on a convicted person is life imprisonment.

6.3.2 CAPITAL PUNISHMENT UNDER THE MODEL

Consider now, a case where a person, Client 1, is charged with murder (in the first degree) and a prosecutor, Client 2, who conducts the prosecution on behalf of the State. If Client 1, the accused, is in fact guilty, then Client 1's justice value is lower than the justice value of the prosecutor (i.e. \( z_1 < z_2 \)). If this is the case, then society wants Client 1 to be convicted and thereby, achieve justice. If Client 1 is in fact innocent, then Client 1's justice value is higher than the prosecutor's justice value (i.e. \( z_1 > z_2 \)) and society wants Client 1 to win.

The payoffs for Client 1 and Client 2 for winning, described by \( \pi_1 \) and \( \pi_2 \), depend on the penalty imposed and the payoff to the prosecutor for winning. In the case of serious crime, and particularly murder, it is reasonable to state that the accused (Client 1) derives more benefit out of winning the case than the prosecutor. The payoff to the accused winning the case is the avoidance of the punishment. If the punishment is death, then the payoff to the accused for winning is the value of his/her life. If the punishment is imprisonment, then the payoff to the accused for winning is the value of his/her freedom. It is also reasonable to assume that these payoffs are the same for both innocent and guilty accused persons. For the prosecutor, the payoff to winning depends on a combination of factors which may include, but is not limited to: the benefit to society from securing a conviction; the private career benefits to the prosecutor; and the private benefit from winning a
I make the assumption that the prosecutors benefit from winning the case is lower than the benefit the accused receives from winning ($\pi_1 > \pi_2$).

If $\pi_1 > \pi_2$, then Client 1 is more likely to win under the Attorney system than under the Solicitor-Barrister system. Whether Client 1 winning is a desirable outcome depends on whether Client 1 is innocent ($z_1 > z_2$) or Client 1 is guilty ($z_1 < z_2$). Society is concerned about achieving the correct outcome and thereby achieving justice. It then follows that society is also concerned about the possibility of obtaining the wrong outcome. A wrong outcome can either be a Type I error (convicting an innocent person) or a Type II error (not convicting a guilty person).

Under the Attorney system, Type II error is more likely to occur because the payoff to the guilty party means that he/she is more willing to expend money on lawyer and hence is able to manipulate the system better. Type I error is more likely to occur under the Solicitor-Barrister system because the system is less sensitive to client manipulation and to the payoffs of each client. As a result, the choice of which system depends on whether society is more concerned about avoiding Type I or Type II errors.

States which continue to administer the death penalty should be more concerned about committing Type I error. My model predicts that, in states which continue to use capital punishment, society should employ an Attorney system. On the other hand, States where the death penalty does not exist should be more concerned about committing Type II error. The consequences of committing a Type II error are smaller than the detriment to society from not convicting a guilty party. Accordingly, where the death penalty is not a potential sentence, then the State should be more concerned about avoiding Type II errors. My model predicts that, in states that do not use capital punishment, a Solicitor-Barrister system should be used.

My model’s predictions are consistent with what is observed in the real world. In States where the death penalty is still an available sentence, such as in the USA and Singapore, society elects to use an Attorney system to avoid the harsh consequences of committing a Type I error. In States where the death penalty has been abolished, such as NSW or the UK, society elects to use a Solicitor-Barrister system. It is also worth noting that there are cases which are not consistent with my models predictions. In South Australia, Victoria and Canada, which do not have death penalty legislation, an Attorney system is employed. This observation directly contradicts my models predictions. However, these observations can also be reconciled with the model. If these societies believe that the detriment caused by
unjust incarceration is still greater than then risk of not convicting guilty persons, then they place higher value on avoiding Type I errors than avoiding Type II errors. Accordingly, the trade-off between the two systems is determined by the relative strength of society's preference for avoiding Type I errors and the strength of society's preference from avoiding Type II errors.
In this Chapter, I consider a social welfare function which accounts for society’s valuing achieving justice and make conclusions about which system delivers higher social welfare gains.

7.1 THE FORM OF THE SOCIAL WELFARE FUNCTION

In this model, there are three components to the Social Welfare Function: 1) The value to society of achieving justice; 2) The expected payoffs to the Clients; and 3) the costs incurred.

To analyse the social welfare, it is necessary to quantify or monetarise the value of justice to society. To do this, I assume that society has a function by which it ascribes a value to justice. Call this function \( V(z_i - z_j | z_i) \) for \( i = 1, 2 \text{ and } j \neq i \). This is the value that society ascribed to the ”justice” achieved when Client 1 wins the case. If \( z_1 > z_2 \), then society obtains some positive payoff from having justice realised. On the other hand, if \( z_1 < z_2 \), the society incurs a loss because justice is not realised. \( V(z_i - z_j | z_i) \) is increasing in \( (z_i - z_j) \) meaning that the value of achieving justice is greater the larger the difference between the two clients justice values. \( V(z_i - z_j, z_i) \) is a continuous function with an unrestricted domain and range.

Conceptually, it is difficult to describe the idea of justice in monetary terms. Justice is not a concept which is easily quantified. However, the function \( V(z_i - z_j, z_i) \) can be thought of as an ordinal function which ranks the order in which society values justice being realised in much the same way that a utility function ranks preferences. If conceptualised in this fashion, the exact numerical value of \( V(z_i - z_j, z_i) \) becomes immaterial. It is sufficient to say that society values justice more for larger values of \( V(z_i - z_j, z_i) \). This interpretation applies even when \( V(z_i - z_j, z_i) \) is incorporated into a social welfare function. This is because the social welfare function can also be given an ordinal interpretation. That is, higher values of the social welfare function imply that society derives more welfare in those circumstances than in circumstances which yield a lower social welfare value.

It may seem even more counter-intuitive that I choose to describe the value of
justice as some continuous function. Usually, justice is conceptualised as a binary concept: has the right outcome been achieved; or has the wrong outcome been achieved. However, it is also reasonable to consider that society values justice to different extents depending on the relative justice of each client’s case. Suppose that Client 1’s justice value is close to but slightly greater than Client 2’s justice value: \( z_1 = z_2 + \epsilon \). In this case, Client 1 deserves to win. However, it would be reasonable to conclude that society values Client 1 winning less in this scenario than if Client 1’s justice value was significantly larger than Client 2’s justice value (i.e. \( z_1 >> z_2 \)). By this logic, the function describing the value of justice should be continuous across the domain of \( (z_1 - z_2) \in [-\infty, \infty] \).

However, social welfare is not only dependent on the value of achieving justice. It also depends on the relative payoffs to each client. Consider a case where Client 1’s payoff is significantly greater than Client 2’s payoff (i.e. \( \pi_1 >> \pi_2 \)) but Client 2’s justice value is only marginally higher (\( z_2 = z_1 + \epsilon \)). Depending on the shape of the Value of Justice Function, \( V(\bullet) \), society could obtain greater welfare if Client 2 wins even though justice is not realised. This sort of case could occur in Family Law Proceedings for property settlement. If one of the parties derives a great utility from obtaining one of the marital assets, then it would be a pareto improving allocation to award that asset to the party who derives the greater utility from it even if this may result in a minor injustice being done to the other party.

The Social Welfare function includes the cost of effort exerted by the lawyers. Effort is costly and the disutility of effort to the lawyers must also be factored into the social welfare function. Since the costs to the client (i.e. \( X_1 \) and \( X_2 \) are simply transfers to the lawyers, they are not included in the social welfare function.

The Social Welfare function must also be weighted appropriately for cases where Client 1 wins and cases where Client 2 wins. This is particularly necessary as \( V(\bullet) \) is defined for specific cases where Client 1 and Client 2 win respectively. This specification accounts for the possibility that the benefit that society obtains if justice is realised (for a given \( z_1 \) and \( z_2 \)) is not necessarily equal to the cost if injustice is realised. Mathematically, that implies that \( V(z_1 - z_2 | z_1, z_1 > z_2) \neq -V(z_1 - z_2 | z_2, z_1 > z_2) \) is not always true. This is only true if \( V(\bullet) \) is an odd function.
Thus, the Social Welfare Function is:

\[
SW = Pr(z_1 > z_2)[Pr(1\text{wins})V(z_1 - z_2|z_1) + \pi_1 + 1 - Pr(1\text{wins})V(z_1 - z_2|z_2) + \pi_2] + \\
(1 - Pr(z_1 > z_2))[Pr(1\text{wins})V(z_2 - z_1|z_1) + \pi_1 + 1 - Pr(1\text{wins})V(z_2 - z_1|z_2) + \pi_2] \\
- C(e_1) - C(e_2)
\] (36)

7.2 THE FIRST BEST AND THE SECOND BEST

To compare the social welfare realised under each system, it is appropriate to construct benchmark cases. These benchmark cases are the First Best case, where there is perfect information, and the Second Best case under contractible effort.

In the model, the First Best world is characterised by perfect information. In a world of perfect information, the Judge is able to observe the justice values of the client and observe their payoffs from winning. Therefore, the Judge will always make the correct decision because he can observe the social welfare realised in Client 1 wins (i.e. \(SW_{FB1} = V(z_1 - z_2) + \pi_1 - C(e_1) - C(e_2)\)) and directly compare this to the social welfare realised when Client 2 wins (i.e. \(SW_{FB2} = V(z_2 - z_1) + \pi_2 - C(e_1) - C(e_2)\)). If \(SW_{FB1} > SW_{FB2}\), then social welfare is maximised when Client 1 wins. Since effort from the lawyers only appears as a cost in \(SW_{FBi}\), the optimal level of effort for the lawyers should be \(e_{FB1} = e_{FB2} = 0\). Furthermore, the choice of structure for the legal profession does not matter because lawyers are unnecessary in the perfect information world.

Under the Second Best world, the Judge cannot observe the justice value of each client. Nor can the Judge observe the payoff to the clients winning. However, if the social planner’s problem is considered, the social planner can observe effort levels and choose them directly. As a result, the efficient level of effort is realised. Using Equation (28) from Chapter 5, the social planner chooses \(e_{i}^{*} = e_{1}^{b} = k\pi_{1}\) in both the Attorney model and in the Solicitor-Barrister model. If that is the case, then there is no difference between the Attorney system and the Solicitor-Barrister system.
because the expected social welfare is the same under each system:

Let $\beta = k[(z_1 - z_2) + 2k(\pi_1 - \pi_2)] + \frac{1}{2}$

\[ \therefore SW^{SP} = \beta V(z_1 - z_2) + (1 - \beta)V(z_2 - z_1) + (\beta - k^2)\pi_1 + (1 - \beta - k^2)\pi_2 \] (37)

Aggregate Social Welfare can be computed by integrating $SW^{SP}$ over all four parameters as shown in Equation (36) (with some abuse of notation):

\[ SW^{SP} = \int_{z_1} \int_{z_2} \int_{\pi_1} \int_{\pi_2} \beta V(z_1 - z_2) + (1 - \beta)V(z_2 - z_1) + (\beta - k^2)\pi_1 + (1 - \beta - k^2)\pi_2 \] (38)

However, in the model, the competitive equilibrium, there is a difference in the effort level under the Attorney system and the Solicitor-Barrister system leads to a difference in the Social outcomes.

7.3 Social Welfare under the Two Systems

For ease of notation, define:

$\gamma_a(z_1, z_2, \pi_1, \pi_2) = Pr(1 \text{ Wins})\text{under the Attorney system}$

$\gamma_{sb}(z_1, z_2, \pi_1, \pi_2) = Pr(1 \text{ Wins})\text{under the Solicitor Barrister system}$

$V_1(z_1 - z_2) = V(z_1 - z_2|z_1)\text{ as the Value of Justice if Client 1 wins}$

$V_2(z_2 - z_1) = V(z_2 - z_1|z_2)\text{ as the Value of Justice if Client 2 wins}$

In order to calculate the total Social Welfare under all possible combinations of the 4 parameters which define the model, $z_1, z_2, \pi_1, \pi_2$, some assumptions need to be made about the distribution of these parameters. Let $z_1, z_2$ be distributed between $[0,1]$ with some probability density function given by $g(z_1)$ and $g(z_2)$ respectively. Assume that $z_1$ and $z_2$ are identically distributed such that $g(z_1) = g(z_2)$ iff $z_1 = z_2$. Let $\pi_1, \pi_2$ be distributed between $[0,1]$ with some probability density function given by $h(\pi_1)$ and $h(\pi_2)$ respectively. Assume that $\pi_1$ and $\pi_2$ are identically distributed such that $h(\pi_1) = h(\pi_2)$ iff $\pi_1 = \pi_2$. Furthermore, make the assumption that $z_1, z_2, \pi_1$, & $\pi_2$ are all independently distributed from each other. Note, however, that I do not impose that $z_i$ and $\pi_i$ must be identically distributed.
The Aggregate Social Benefit function is the sum of the social benefit from all possible combinations of realised values of the parameters: \((z_1, z_2, \pi_1, \& , \pi_2)\). Therefore, the general form for Aggregate Social Benefit Function over all possible parameter values is given by:

\[
SB = \int_{z_1} \int_{z_2} \int_{\pi_1} \int_{\pi_2} \gamma(z_1, z_2, \pi_1, \pi_2)(V_1 + \pi_1) + (1 - \gamma(z_1, z_2, \pi_1, \pi_2))(V_2 + \pi_2) dz_2 dz_2 d\pi_1 d\pi_2 \tag{39}
\]

The Social Benefit function describes the total Benefit that accrues to society over all possible combinations of parameter values as a result of the litigation. This is the sum of: 1) the value of justice when Client 1 wins; 2) Client 1’s payoff to winning; 3) the value of justice when Client 2 wins; 4) Client 2’s payoff to winning. Of course, these four items are weighted according to the probability with which they occur. However, the Aggregate Social Welfare Function also takes into account the cost of effort on the solicitor’s tasks and the barristers tasks. Since effort is incurred regardless of whether the Client wins, both Client 1’s lawyer’s cost of effort and Client 2’s lawyer’s cost of effort must be included in the Social Cost function as shown in Equation (36) below:

\[
SC = \int_{z_1} \int_{z_2} \int_{\pi_1} \int_{\pi_2} \frac{1}{2}(e_1^s)^2 + \frac{1}{2}(e_1^b)^2 + \frac{1}{2}(e_2^s)^2 + \frac{1}{2}(e_2^b)^2 dz_2 dz_2 d\pi_1 d\pi_2 \tag{40}
\]

Therefore, the Aggregate Social Welfare Function is given by:

\[
SW = SB - SC \tag{41}
\]

I note here that (Choi and Sanchirico 2004) use a similar to calculate social welfare in their model. In their model, Choi et. al. calculate social welfare as the integration of all defendants’ net private benefit less the integration of net expected cost of litigation over all suits. Whilst my model and the model analysed in (Choi and Sanchirico 2004) examine different issues, the methodology employed by Choi et. al is generalisable (see (Choi and Sanchirico 2004, p. 334).

Given specific functions of \(V(\bullet)\) and appropriate Probability Density Functions for the parameters \((z_1, z_2, \pi_1, \& , \pi_2)\), Equation (41) provides one method for calculating the Net Social Welfare of each system. Using this result, a detailed comparison between the two competing systems can be made.
7.4 Comparing Social Welfare across the Two Systems

7.4.1 Aggregate Social Welfare

The computation of aggregate social welfare according to the form given by Equations (35), (36) and (37) is difficult. Accordingly, I present some intuitive results in this section.

The result of the social welfare analysis is unlikely to be one-sided in the sense that one system will dominate the other. I expect this result because the probabilities of winning are different between the two systems and are sensitive to different effects. Under the Attorney model, the probability of justice being realised is more sensitive to the difference between the client’s payoffs compared to the Solicitor-Barrister system. On the other hand, the probability of justice being realised in the Solicitor-Barrister system is relatively more sensitive to the different in the clients’ justice values. As such, the relative importance of these two effects will affect the social welfare function. Furthermore, the difference in the clients’ justice values appears in the Aggregate Social Welfare function both in the probability that the client will win and in the function $V(\bullet)$. The difference in the clients’ payoffs appears in the Aggregate Social Welfare function both in the probability that the client will win and in the realised payoff conditional on the client winning. As such, the shape of the function $V(\bullet)$, and its relative importance to the payoffs of the clients will impact on which system realises the greater social welfare.

The effect of the cost functions is also uncertain. Whilst the Attorney system is more cost effective, less effort in total is exerted under the Solicitor-Barrister system. As such, there are cases where the total cost of effort under the Solicitor-Barrister system will be less than the total cost of effort under the Attorney system. In those cases, the Solicitor-Barrister system may realise higher social welfare because the cost of effort will be lower. Note that the social benefit to litigation, captured by the expected value of $V(\bullet)$ and $\pi_i$, does not change significantly despite changes in the effort level. Even if the cost of efforts decrease, the probability that Client 1 wins and the probability that Client 2 wins must sum to one. Furthermore, since the best response functions are strategic complements, the impact on the social benefit is ambiguous. However, I conjecture that, using the intuition from Lazear and Rosen (1981), that the social benefit will not change. As a result, a lower cost of effort will increase Aggregate Social Welfare. Thus, ceteris paribus, if the cost of effort is lower in the Solicitor-Barrister system, the Solicitor-Barrister system may realise higher Aggregate Social Welfare.
7.4.2 Social Welfare in Specific Cases

It is also useful to examine specific realisations of the parameters. Specifically, I consider that the analysis of social welfare will depend on the correlation between the client’s justice value and the client’s payoff from winning. This is type of analysis was conducted in Chapter 6 in the analysis of Justice. I conjecture that, if a similar approach is taken to the analysis of social welfare, the results should reinforce the results confirmed in Propositions 2 and 3 (Chapter 6). Consider firstly, the case examined in Proposition 2 where \( z_1 > z_2 \) and \( \pi_1 < \pi_2 \). In this case, justice was more likely to be realised under the Solicitor-Barrister system. That is, conditional on Client 1 having the higher justice value, it was more likely that Client 1 wins under the Solicitor-Barrister system than under the Attorney system. In the case of Social Welfare, if Client 1 has a higher justice value, then \( V(z_1 - z_2) > 0 \) and \( V(z_2 - z_1) < 0 \). That is, society derives value from Client 1 winning and derives disutility if Client 2 wins. Since it is more likely that Client 1 will win, then society is more likely to gain the benefit of the payoff to Client 1 winning \( (V(z_1 - z_2) + \pi_1) \). Excepting the rare case where the payoff to Client 2 is excessively large (i.e. \( \pi_2 > V(z_1 - z_2) + |V(z_2 - z_1)| + \pi_1 \) - obtained by rearranging: \( \pi_2 - |V(z_2 - z_1)| > V(z_1 - z_2) + \pi_1 \)), the Social Benefit to Client 1 winning will be higher. Accordingly, it is more likely that social welfare is higher under the Solicitor-Barrister system than under the Attorney system. This conjecture is consistent with the intuition and result in Proposition 2.

On the other hand, if the realised parameters accord with the case in Proposition 3, then social welfare is likely to be higher under the Attorney system. Under Proposition 3, there is a positive correlation between the justice value and the payoff to winning (i.e. \( z_1 > z_2 \) and \( \pi_1 > \pi_2 \)). Client 1 has the higher justice value (therefore \( V(z_1 - z_2) > 0 > V(z_2 - z_1) \)) and Client 1’s payoff from winning is higher. Since Client 1 wins with a higher probability under the Attorney system compared to the Solicitor-Barrister system, social welfare will be higher under the Attorney system. This conjecture is consistent with the result proven in Proposition 3.

It is then appropriate to ask, in what circumstances will the realised parameters accord with Proposition 2 and in what circumstances will they accord with Proposition 3? In certain areas of law, it is more likely that there is a positive correlation between the justice value and the payoff to winning. For example, in tort law and particularly medical negligence, the plaintiff is more likely to have a higher justice value than the defendant. Furthermore, the plaintiff is more likely to suffer more damage if he/she loses. Therefore, his/her payoff to winning is higher
(due to the compensatory damages principle). Therefore, it is more likely that the attorney system will achieve higher social welfare if there is a high proportion of tort cases being litigated in the Court. This result is consistent with the American system which is notorious for over-litigation of negligence cases. In other areas of law, such as in criminal law, there is more likely to be a negative correlation between the justice value and the payoff to winning. This is because, assuming a vigilant and diligent police force, the accused is more likely to be guilty than innocent. Even so, the accused’s payoff to winning is much higher than the prosecutor’s payoff to winning (as argued in Chapter 6). Therefore, the solicitor-barrister system may realise higher social welfare if a large proportion of cases heard are criminal cases. Therefore, I conjecture that the proportion of the types of cases heard by the Court may impact on which system realises higher social welfare.

7.4.3 Policy Implications for Social Welfare

If the preceding analysis is assumed to be correct, then some conclusions can be made about policies relating to the regulation of the legal profession. Consider a case where society has a law which makes it more likely that the justice value and the payoff to winning are positively correlated. If society then wishes to change the law such that it is now more likely that justice values are negatively correlated with the payoff to winning, then Parliament must consider the impact that this change will have on social welfare. If society is currently employing a Split Profession system, then it is likely that the changed law will increase social welfare. On the other hand, if society is currently employing a Fused Profession system, it is likely that the changed law will decrease social welfare. As such, the structure of the legal profession impacts on whether social welfare increases or decreases as a result of the change in the law. Thus, the impact on social welfare should be a consideration in the choice of whether to implement the law or not.

Taking this argument to its logical extreme, if society experiences a dramatic change in its laws (for example, as a result of a revolution), then the impact of the change on the correlation between the justice value and the payoff to winning will determine whether society should change the structure of its legal profession or not.
The model described in this thesis provides a framework for further analysis in this area. The model presented has a number of natural extensions which are both interesting and significant but which are too detailed to be comprehensively covered in this thesis. In this section, I present some possible extensions to the model and provide some intuition about the possible results which might arise if these avenues are explored in the future.

8.1 Generalised Framework

The analysis of the model presented in this thesis has focused on a particular specification of the model under specific functional forms.

The most natural extension to this thesis is to generalise the result for all, or a limited class of, functional forms. This would involve a general cost function $C(e^s_i, e^b_i)$ and a generalised probability function $F(z_1, z_2, e_1, e_2)$. I conjecture that the results of this model are qualitatively robust under any convex cost function satisfying the properties: $C'(\bullet) > 0; C'' > 0$ and which is additively separable in $e^s_i$ and $e^b_i$. This conjecture is based on the fact that the trade-offs faced by the Solicitor are driven by the solicitor’s and the barrister’s convex cost functions. Convex costs mean that allocating some positive amount of effort on both tasks will be less costly than allocating all effort on one task. This means that the Solicitor would be more likely to substitute to using incentives (i.e. inducing effort from the barrister) as $e^s_i$ increases because the marginal cost of incentives is lower, relative to the marginal cost of effort. However, in the unlikely and somewhat un-intuitive case, of concave costs, the marginal cost of effort is decreasing as effort increases (i.e. $C'' < 0$. If this is the case, then as the Solicitor increases his effort level $e^s_i$, it becomes less costly for him to exert more effort. As a result, the Solicitor may not substitute incentives for effort but may increase effort further. It may also be the case, for concave cost functions, that either the solicitor exerts no effort and fully incentivises the barrister or that the barrister exerts no effort and the solicitor pays no incentive.

I also conjecture that the results presented in this thesis are qualitatively robust for any generalised probability function $F(z_1, z_2, e_1, e_2)$ which is monotonically
increasing in both \( z_1 - z_2 \) and \( e_1 - e_2 \) and which satisfies \( F(z_1 = z_2, e_1 = e_2) = \frac{1}{2} \).

The intuition behind this is that the form of the probability function does not affect the result as much as the specific interaction between \( z_1 \) and \( e_1 \) inside that function. In fact, the degree to which the solicitor substitutes between effort and incentives in the model is entirely determined by the marginal impact of effort on the probability function. Provided that the probability function is monotonically increasing in \( e_1 - e_2 \), the solicitor’s decision qualitatively the same regardless of the function form of \( F(\bullet) \). The main determinants of the solicitor’s decision of how much effort to exert and how much incentives to provide to the barrister are the marginal effect of effort on the probability function and the marginal effect of the solicitor’s effort on the probability function. However, these factors are not qualitatively changed by changes in the functional form of \( F(\bullet) \) provide that the certain regularity conditions (as stated above) are satisfied.

The results may change qualitatively if there are interactions effects between \( e_s^i \) and \( e_b^j \) in both the cost function and the probability function. I conjecture that the results change because there is no longer linear substitutability of the two tasks. Therefore, the trade-off faced by the solicitor in choosing the level of incentives to provide to the barrister changes. If the interaction enhances the complementarity of the two tasks (i.e. effort from the solicitor enhances the impact of the barrister’s effort), I conjecture that the solicitor will increase incentives. However, if the interaction enhances the substitutability of the two tasks, I conjecture that the solicitor will reduce incentives when his/her client is more likely to win (i.e. \( \pi_i > \pi_j \) and/or \( z_i > z_j \)) but increase incentives if his/her client is more likely to lose.

**8.2 Risk Aversion**

In this model, I have assumed that all the agents (i.e. the Clients, Attorneys, Solicitors and Barristers) are all risk neutral. As such they are only consider the expected value of their payoff as weighted by the probability function \( F(\bullet) \). If the Solicitor (and/or the barrister) is risk averse, the dynamics involved in trade-offs faced by the solicitor in determining how much effort to exert and how much incentive to give to the barrister change. Based on the model I present in this thesis, I make the following conjectures about the model under risk aversion.

If the solicitor is risk averse but the barrister is not, I expect that the solicitor will be more likely to substitute away from exerting effort and provide more incentives to the barrister. The intuition is that the solicitor is willing to accept a lower payoff (i.e. \( X_i - Y_i \) becomes smaller as \( Y_i \) increase) to avoid bearing the risk of exerting effort.
If the solicitor exerts effort, he/she is bearing the risk that Client 1 loses because he/she has exerted effort at a certain cost but is only receiving a payoff with some probability less than 1. The alternative to the solicitor exerting effort is the solicitor providing the barrister with incentives. If the solicitor provides incentives to the barrister, the barrister bears the risk of Client 1 losing. Since the barrister is risk neutral, he/she is willing to accept these increased incentives because they increase his/her expected payoff. The solicitor is willing to give those incentives because he/she is able to avoid the risk associated with exerting effort.

If the barrister is risk averse but the solicitor is not, I expect that the opposite will occur. In this case, the solicitor will reduce incentives because the marginal effect of incentives is smaller. Since the barrister is risk averse, he/she will choose a lower effort level, compared to the case where he/she is risk neutral, for the same level of incentives. As a result, the marginal effect of incentives is smaller. As a result, the solicitor is more likely to exert effort since he is risk neutral.

Finally, if both the barrister and solicitor are risk averse, then I conjecture that both effort and incentives will decrease. In effect, this case is a combination of the two cases discussed above. Since both lawyers are risk averse, the marginal effect of the incentives \( Y_i \) and \( X_i \) on the barrister and the solicitor respectively will be reduced. Accordingly, the Client will provide less incentives \( X_i \) to the solicitor. In turn, the solicitor will provide less incentives \( Y_i \) to the barrister. As a result, the effort level decreases.

8.3 Budgetary Constraints

This model considers clients who have infinite resources to fund their litigation. However, it is often the case that one or both clients experience a binding budget constraint. If both clients have a budget constraint, then that model is qualitatively equivalent to the current model presented in this thesis. The interesting case is one where Client 1 has a binding budget constraint but Client 2 does not have any budget constraint. I conjecture that the impact of Client 1’s budget constraint on the model will depend on whether justice values are positively or negatively correlated with payoffs to winning. If justice values are negatively correlated with payoffs to winning, then the Solicitor-Barrister system should perform better where there are budgetary constraints. Using Proposition 2, I expect that the Solicitor-Barrister system prevents Client 2 from using his/her higher payoff and unlimited budget to over-incentivise the lawyers. Since the lawyers are more independent from the Client
in the Solicitor-Barrister system, the higher payoff to Client 2 and the unlimited budget is likely to have a smaller impact on the Client 2’s lawyer’s choice of effort under the Solicitor-Barrister system compared to the Attorney system. If, on the other hand, justice values and the payoff to winning are positively correlated, then I expect that the Attorney system will perform better under budgetary constraints. Under the Attorney system, Client 1 can use his/her higher payoff to winning to increase his/her lawyer’s choice of effort. This has a greater impact on the lawyer’s choice of effort under the Attorney system than the Solicitor-Barrister system. As a result, I expect that the budgetary constraint problem will be reduced.

8.4 Collusion between Lawyers

In any non-cooperative game, there may exist an outcome which pareto dominates the Nash Equilibrium but which cannot be achieved some form of co-operation between the players. In this model, I assume that the lawyers do not act co-operatively in the litigation game. However, if that assumption is relaxed, then collusive outcomes may exist whereby the lawyers collude to reduce their effort levels and which is sustainable under certain conditions. Consider, for example, a scenario where the lawyers can collude and reduce their effort level below the Nash Equilibrium level in this model. If the lawyers can do this, then they will increase their expected payoff because they reduce their cost of effort without affecting the client’s probability of winning. However, this collusive outcome may not be sustainable because of two factors. Firstly, the lawyers only interact with each other for a short finite time period. After which they may or may not meet again. This will reduce the set of possible circumstances where they can sustain collusion. Secondly, the trade-off that the solicitor faces in this model changes under collusion. The case for collusion can also be extended by not only allowing lawyers to collude with the opponent’s lawyers, but also amongst the solicitor and barrister.

8.5 Empirical Validation

Another extension to this model is to test the results empirically. Whilst there are a wide range of econometric methodologies which could be applied to empirically test the model presented in this thesis, the difficulty that arises in empirically testing this model is the absence of data on the parameters of interest. It is difficult to quantify, let alone measure, the justice value (i.e. $z_i$) associated with a litigant’s case. Furthermore, data on the payoffs to each client is difficult to obtain because the information may be confidential. Even if the information on the winning party’s
payoff can be estimated using the reported award, the losing party’s potential payoff is not easily measurable. Furthermore, the awarded sum may not represent the full payoff to the winning party because of principles such as contributory negligence. In those cases, the actual sum awarded does not reflect the true payoff to the client in the case of a complete victory. Finally, in the case of criminal law, the payoff to winning and losing is even more difficult to quantify. However, if such a dataset can be obtained, then the results of this model can be empirically measured.

One result in this model which could be tested empirically is the result that the probability of achieving justice under the Attorney system is more sensitive to the client’s payoffs. Thus, if an appropriate data can be obtained, an econometric analysis could be run to determine the effect of fusing/splitting the Legal Profession. I conjecture that the probability of achieving justice can be proxied by the rate at which appeals fail. In other words, if a decision is appealed and the appeal is dismissed, this implies that the decision at trial was correct. Therefore, justice was achieved. If the appeal was upheld, then the decision at trial was incorrect and justice was not achieved. By examining these two probabilities (i.e. the probability that the appeal is dismissed and the probability that the appeal is upheld), some conclusions on the probability of achieving justice can be made.

I suggest that data can be obtained by restricting the class of cases which form the dataset. Only tort cases which are Supreme Court cases (which are then appealed to the Court of Appeal) should be considered. Restricting the dataset to this class of cases achieves two things. Firstly, Supreme Court cases have high payoffs to winning and are usually fought by clients who have unlimited budgets. This means that the financial circumstances of the litigants in the dataset accords with those in my theoretical model. Secondly, tort cases are civil cases which mean that it is easier to obtain data on the client’s payoffs. Furthermore, barristers and solicitors are often hired on a speculative basis in torts cases.

One econometric method which can be used to test the model is Regression-Discontinuity Analysis. Regression Discontinuity Analysis, at its most basic level, takes pre-treatment and post-treatment data and analyses the difference that are due to the treatment effect (see, Thistlewaite and Campbell (1960); Imbens and Lemieux (2010)). It exploits the treatment event as an exogenous threshold to determine the causal effect of the treatment. In the context of this model, the treatment effect would be the time when a jurisdictions shifts from a Split Profession to a Fused Profession (or vice versa). This was observed in South Australia in 1993 when the Legal Profession Act 1981 (SA) was amended to formally fused the South
Australian legal profession. As a result, 06 May 1993 (the date of the fusion took effect) is the threshold event which separates the pre-treatment data from the post-treatment data. The treatment is, of course, the fusion of the legal profession. Thus, the question is whether the fusion of the South Australian legal profession in 1993 affected the probability with which justice is achieved (using appeals as a proxy).
CHAPTER 9
Conclusions

This thesis proposes a framework to answer the question: Under what circumstances does the Split Profession system produce better social outcomes than the Fused Profession system? I develop a theoretical model of the litigation process and use it to compare the outcomes arising under a Split Profession system against the outcomes arising under a Fused Profession system. I analyse the results on three bases: 1) Whether the division of labour is more efficient and whether the independence of lawyers is preserved; 2) the probability with which each system realises justice; and 3) which system delivers better social welfare overall.

I find that the Split Profession system does not achieve an efficient division of labour because the solicitor faces a trade-off between incentivising the barrister and exerting effort by himself. Due to the free-riding effect of providing incentives to the barrister, the solicitor chooses an inefficient level of effort for himself and induces an inefficient level of effort from the barrister. In contrast, the Fused Profession system allows the attorney to internalise this externality leading to a more efficient level of effort. I find that, due to a double marginalisation effect, both the barrister and the solicitor are less sensitive to the client’s incentives. This part of the model captures the independence of the lawyers from the client, under the Split Profession system. On the other hand, the attorney is more sensitive to the client’s incentives because of the more direct relationship between the attorney and the client.

I find that the payoffs to winning for each client strongly influence the probability that the Fused Profession system achieves justice. On the other hand, the Split Profession system is relatively more sensitive to differences in the underlying justice of each client’s case. As a result, if the payoffs are positively correlated with the underlying justice, then using a Fused Profession system is more likely to achieve justice. However, if the payoffs are negatively correlated with justice, then using a Split Profession system is more likely to achieve justice. Furthermore, the relative importance of avoiding miscarriages of justice (Type I errors) compared to avoiding errors of impunity (Type II errors) will also determine which system should be used.

I propose a methodology for quantifying Aggregate Social Welfare arising from
litigation. I make the conjecture that Social Welfare is larger under the Split Profession system if justice values and payoffs to winning are negatively correlated. However, if justice values are positively correlated to the payoffs from winning, then I conjecture that the Fused Profession system will result in higher Social Welfare. These conjectures are consistent with Propositions 2 and 3 of this thesis.

I also propose a number of potential extensions to the model which can be developed through further research. These extensions will enrich the model I propose and provide new insights into the trade-offs between the two systems.

The contribution of this thesis lies in developing an economic framework to analyse the structure of the legal profession. At the same time, this thesis is also the first, to the best of my knowledge, to model the litigation process using agents who compete on behalf of the client and who are incentivised on incentive contracts. As a result, this thesis develops a new framework from which to analyse the litigation process and the impact of the structure of the legal profession on society. The conclusions reached by this thesis, and any future work, provide a better understanding of the legal system and can have implications for policy making the regulation of the legal profession.
Appendix A

Proof of Lemma 1

Assume that there exists some value $k > k > 0$ such that, if $k > k > k$, a Unique Interior Equilibrium for the Model described in Chapter 4 exists. Assume now that $k > k > k$. Using the Model, and as shown in Appendix B, the Model has a Subgame Perfect Nash Equilibrium characterised by:

Attorney System:

$$\left( \left( e_1^{s,a}, e_1^{b,a}, X_1^* \right), \left( e_2^{s,a}, e_2^{b,a}, X_2^* \right) \right)$$

is:

$$\left( \left( \frac{2k(2\pi_1+\pi_2)-(z_1-z_2)-\frac{3}{2}}{6}, \frac{2k(2\pi_1+\pi_2)-(z_1-z_2)-\frac{3}{2}}{6}, \frac{2k(2\pi_1+\pi_2)-(z_1-z_2)-\frac{3}{2}}{6k} \right), \left( \frac{2k(2\pi_2+\pi_1)-(z_2-z_1)-\frac{3}{2}}{6}, \frac{2k(2\pi_2+\pi_1)-(z_2-z_1)-\frac{3}{2}}{6k}, \frac{2k(2\pi_2+\pi_1)-(z_2-z_1)-\frac{3}{2}}{6k} \right) \right)$$

(A1)

Solicitor-Barrister System:

$$\left( \left( e_1^*, e_1^* \right), \left( e_2^*, e_2^* \right), \left( X_1^*, Y_1^* \right), \left( X_2^*, Y_2^* \right) \right)$$

is:

$$\left( \left( \frac{k(\pi_1-\pi_2)+z_1-z_2+\frac{3}{2}}{3}, \frac{k(2\pi_2+\pi_1)-2(z_1-z_2)-\frac{3}{2}}{3}, \frac{k^2(2\pi_1+\pi_2)-k(z_1-z_2)-\frac{3}{2}}{3}, \frac{k(2\pi_1+\pi_2)-2(z_1-z_2)-\frac{3}{2}}{3k} \right), \left( \frac{k(2\pi_1+\pi_2)-2(z_1-z_2)-\frac{3}{2}}{3}, \frac{k^2(2\pi_2+\pi_1)-k(z_1-z_2)-\frac{3}{2}}{3}, \frac{k(2\pi_2+\pi_1)-2(z_1-z_2)-\frac{3}{2}}{3k} \right) \right)$$

(A2)

In this Appendix, I prove that:

1. There Exists an Equilibrium to the game described in Chapter 4 of this thesis;
2. If an Equilibrium exists, under certain conditions, the Equilibrium is interior; and
3. If the Equilibrium is interior, it is unique.

A.1 AN EQUILIBRIUM EXISTS

Notice that the Best Response functions are linear and map from $\mathbb{R} \rightarrow \mathbb{R}$. Since $k > 0$, the Best Response functions are upward sloping. Furthermore, if $k < 1$, then there are some values of $e_1$ and $e_2$ such that the Best Response functions will cross.

A.2 THE EQUILIBRIUM IS INTERIOR

If this is an Interior Equilibrium, the following conditions need to be satisfied:

A3 $0 \geq k \left[ (z_1 + e_1) - (z_2 + e_2) \right] + \frac{1}{2} \geq 1$;
A4 $e^a_1 \geq 0$;
A5 $e^b_1 \geq 0$; and
A6 $\pi_i \geq X_i \geq Y_i \geq 0$

These conditions are satisfied under the Attorney system if:

A7 $-\frac{k}{2} \leq \frac{k}{3} \left[ 2k(\pi_1 - \pi_2) + (z_1 - z_2) \right] \leq \frac{1}{2}$
A8 $2k(2\pi_1 + \pi_2) - (z_1 - z_2) - \frac{3}{2k} \geq 0$
A9 $2k(2\pi_1 - \pi_2) + (z_1 - z_2) + \frac{3}{2k} \geq 0$
A10 $k > 0$

It can be shown, with some simple algebra, that, given realisation for the parameters $(\pi_1, \pi_2, z_1, z_2)$, that there exists some $k$ such that the conditions are satisfied for $k > k$. Furthermore, there also exists some $\bar{k}$ such that if, $k < \bar{k}$, the above conditions are satisfied. This result comes from the fact that the condition above are quadratic in $k$. As such, there exists two points, ($\bar{k}$ and $\underline{k}$) such that $k$ satisfied those conditions.

The conditions for the Solicitor-Barrister system are:

A11 $-\frac{k}{2} \leq \frac{k}{3} \left[ k(\pi_1 - \pi_2) + (z_1 - z_2) \right] \leq \frac{1}{2}$
A12 $k^2(\pi_1 - \pi_2) + (z_1 - z_2) + 3 \geq 0$
A13 $k^2(\pi_1 + 2\pi_2) - 2(z_1 - z_2) - 3 \geq 0$
A14 $k\pi_1 - \pi_2 + (z_1 - z_2) + \frac{3}{2k} > 0$
A15 $k > 0$

Again, due to the quadratic nature of the above conditions, the values ($\bar{k}$ and $\underline{k}$) exist.
A.3 Summary of the Conditions on $k$

There exists some $\bar{k}$ and some $k$ such that the following conditions are all satisfied:

- $0 \geq k \geq 1$
- $\frac{-1}{2} \leq \frac{1}{2}[2k(\pi_1 - \pi_2) + (z_1 - z_2)] \leq \frac{1}{2}$
- $\frac{-1}{2} \leq \frac{1}{2}[k(\pi_1 - \pi_2) + (z_1 - z_2)] \leq \frac{1}{2}$
- $2k(2\pi_1 + \pi_2) - (z_1 - z_2) - \frac{3}{4k} > 0$
- $2k(2\pi_1 - \pi_2) + (z_1 - z_2) + \frac{3}{4k} > 0$
- $k^2(\pi_1 - \pi_2) + (z_1 - z_2) + 3 \geq 0$
- $k^2(\pi_1 + 2\pi_2) - 2(z_1 - z_2) - 3 \geq 0$
- $k\pi_1 - \pi_2 + (z_1 - z_2) + \frac{3}{4k} > 0$

A.4 The Equilibrium is Unique

If the Best Response functions are linear, there can only be a single crossing. Therefore, if an equilibrium exists, and the equilibrium is interior, the Equilibrium must be unique.
APPENDIX B

Proof of Proposition 1

This Appendix provides the solution to the Model using the specification outlined in Chapter 4.

B.1 ATTORNEY MODEL

Consider the Client’s problem as:

\[
\max_{X_i, e_i^a, e_i^b} \left[ k((z_i + e_i) - (z_{-i} + e_{-i})) + \frac{1}{2}(\pi_i - X_i) \right]
\]

s.t.

\[ e_i = e_i^a + e_i^b \]

\[(e_i^a, e_i^b) \in \arg \max \left[ k((z_i + e_i) - (z_{-i} + e_{-i})) + \frac{1}{2}(X_i) - \frac{1}{2}\left( (e_i^a)^2 + (e_i^b)^2 \right) \right] \]

Take Client 1 to be the representative client. Client 1’s problem can be solved using Backward Induction. Therefore, start by consider Client 1’s Attorney’s problem:

\[
\max_{e_1^a, e_1^b} \left[ k((z_1 + e_1) - (z_2 + e_2)) + \frac{1}{2}X_1 - \frac{1}{2}\left( (e_1^a)^2 + (e_1^b)^2 \right) \right]
\] (B1)

The First Order Conditions are:

\[
kX_1 = e_1^a \quad \text{(B2)}
\]

\[
kX_1 = e_1^b \quad \text{(B3)}
\]

\[
\therefore e_1 = e_1^a + e_1^b = 2kX_1 \quad \text{(B4)}
\]

Now, substitute Equation (B4) into Client 1’s problem. Therefore, Client 1’s
problem is now:

\[
\max_{X_1} \left[ k((z_1 + e_1) - (z_2 + e_2)) + \frac{1}{2} \right](\pi_1 - X_1)
\]

s.t.

\[e_1 = 2kX_1\]  

(B5)

Solving Equation (B5) for \(X_1\), the First Order Conditions are:

\[
2k^2\pi_1 - k((z_1 + 4kX_1) - (z_2 + e_2)) + \frac{1}{2} = 0
\]

(B6)

Rearranging Equation (B6):

\[
X_1 = \frac{2k^2\pi_1 - k(z_1 - z_2) + ke_2 - \frac{1}{2}}{4k^2}
\]

(B7)

Substitute Equation (B7) into Equation (B4):

\[
e_1 = \frac{2k^2\pi_1 - k(z_1 - z_2) + ke_2 - \frac{1}{2}}{2k}
\]

(B8)

By Symmetry:

\[
e_2 = \frac{2k^2\pi_2 - k(z_2 - z_1) + ke_1 - \frac{1}{2}}{2k}
\]

(B9)

Solving Equations (B8) and (B9) simultaneously yields:

\[
e_1^* = \frac{2k^2(2\pi_1 + \pi_2) - k(z_1 - z_2) - \frac{3}{2}}{3k}
\]

(B10)

\[
e_2^* = \frac{2k^2(2\pi_2 + \pi_1) - k(z_2 - z_1) - \frac{3}{2}}{3k}
\]

(B11)

Substituting Equation (B11) into Equation (B7) yields:

\[
X_1^* = \frac{2k(2\pi_1 + \pi_2) - (z_1 - z_2) - \frac{3}{2k}}{6k}
\]

(B12)
Substituting Equation (B12) into Equations (B2) and (B3):

\[ e_1^s = e_1^b = \frac{2k(2\pi_1 + \pi_2) - (z_1 - z_2) - \frac{3}{2k}}{6} \]  

(B13)

It can easily be verified that:

\[ e_1^s + e_1^b = 2kX_1^* = \frac{2k(2\pi_1 + \pi_2) - (z_1 - z_2) - \frac{3}{2k}}{3} \]  

(B14)
B.2 SOLICITOR BARRISTER MODEL

Again consider the Client’s problem as:

\[
\max_{X_i, Y_i, e_i^s, e_i^b} \left[ k((z_i + e_i) - (z_{-i} + e_{-i})) + \frac{1}{2}(\pi_i - X_i) \right]
\]

s.t.

\[
e_i = e_i^s + e_i^b
\]

\[
(e_i^s, Y_i) \in \arg \max \left[ k((z_i + e_i) - (z_{-i} + e_{-i})) + \frac{1}{2}(X_i - Y_i) - \frac{1}{2}(e_i^s)^2 \right]
\]

\[
(e_i^b) \in \arg \max \left[ k((z_i + e_i) - (z_{-i} + e_{-i})) + \frac{1}{2}(Y_i) - \frac{1}{2}(e_i^b)^2 \right]
\]

Take Client 1 to be the representative client. Client 1’s problem can be solved using Backward Induction. Since Client 1 hires the Solicitor and (through the Solicitor) the Barrister, the problem must be solved by starting at the Barrister’s Problem:

Client 1’s Barrister’s problem is:

\[
\max_{e_i^b} \left[ k((z_1 + e_1) - (z_2 + e_2)) + \frac{1}{2}(Y_1) - \frac{1}{2}(e_i^b)^2 \right]
\]

(B15)

The First Order Condition is:

\[
kY_1 = e_i^b
\]

(B16)

Now, consider Client 1’s Solicitor’s Problem:

\[
\max_{e_i^s} \left[ k((z_1 + e_1) - (z_2 + e_2)) + \frac{1}{2}(X_1 - Y_1) - \frac{1}{2}(e_i^s)^2 \right]
\]

s.t.

\[
(e_i^b) \in \arg \max \left[ k((z_i + e_i) - (z_{-i} + e_{-i})) + \frac{1}{2}(Y_i) - \frac{1}{2}(e_i^b)^2 \right]
\]

(B17)

Substituting Equation (B16) into the Solicitor’s problem (Equation (B17)) and
solving, the following First Order Conditions are obtained:

\[ k(X_1 - Y_1) = e_1^* \]  \hspace{1cm} (B18)

\[ k^2X_1 - \left[ k((z_1 + 4kX_1) - (z_2 + e_2)) + \frac{1}{2} \right] = 0 \]  \hspace{1cm} (B19)

Solving Equations (B18) and (B19) simultaneously yields:

\[ e_1^* = \frac{k^2X_1 - ke_2 + k(z_1 - z_2) + \frac{1}{2}}{k} \]  \hspace{1cm} (B20)

\[ Y_1 = \frac{ke_2 - k(z_1 - z_2) - \frac{1}{2}}{k^2} \]  \hspace{1cm} (B21)

Substituting Equation (B21) into Equation (B16) yields:

\[ e_1^b = \frac{ke_2 - k(z_1 - z_2) - \frac{1}{2}}{k} \]  \hspace{1cm} (B22)

Using Equation (B20) and (B22):

\[ e_1 = e_1^* + e_1^b = kX_1 \]  \hspace{1cm} (B23)

Now, Using Equations (B21) and (B23), consider Client 1’s problem:

\[
\max_{X_1} \left[ k((z_1 + e_1) - (z_2 + e_2)) + \frac{1}{2} \right] (\pi_1 - X_1)
\]

\[ s.t. \]

\[ e_1 = e_1^* + e_1^b = kX_1 \]

\[ Y_1 = \frac{ke_2 - k(z_1 - z_2) - \frac{1}{2}}{k^2} \]

Solving Equation (B24), the following First Order Condition is obtained:

\[ X_1 = \frac{k^2\pi_1 - k(z_1 - z_2) + ke_2 - \frac{1}{2}}{2k^2} \]  \hspace{1cm} (B25)
Substituting Equation (B25) into Equation (B23):

\[ e_1 = \frac{k^2\pi_1 - k(z_1 - z_2) + ke_2 - \frac{1}{2}}{2k} \]  

(B26)

By Symmetry:

\[ e_2 = \frac{k^2\pi_2 - k(z_2 - z_1) + ke_1 - \frac{1}{2}}{2k} \]  

(B27)

Solving Equations (B26) and (B27) (as best response functions):

\[ e_1^* = \frac{k^2(2\pi_1 + \pi_2 - k(z_1 - z_2) + ke_2 - \frac{3}{2})}{3k} \]  

(B28)

\[ e_2^* = \frac{k^2(2\pi_2 + \pi_1 - k(z_2 - z_1) + ke_1 - \frac{3}{2})}{3k} \]  

(B29)

Substitute Equation (B29) into Equation (B25) and Equation (B21):

\[ X_1^* = \frac{k^2(2\pi_1 + \pi_2 - k(z_1 - z_2) - \frac{3}{2})}{3k^2} \]  

(B30)

\[ Y_1^* = \frac{k^2(2\pi_2 + \pi_1 - 2k(z_1 - z_2) - 3)}{3k^2} \]  

(B31)

Substituting Equations (B30) and (B31) into Equations (B16) and (B18):

\[ e_1^{s*} = \frac{k(\pi_1 - \pi_2) + (z_1 - z_2) + \frac{3}{k}}{3} \]  

(B32)

\[ e_1^{b*} = \frac{[k(2\pi_1 + \pi_2 - 2(z_1 - z_2) - \frac{3}{k})]}{3} \]  

(B33)

Note that it is a matter of simple algebra to show that:

\[ e_1^{s*} + e_1^{b*} = kX_1^* = \frac{k(2\pi_1 + \pi_2 - (z_1 - z_2) - \frac{3}{2k})}{3} \]  

(B34)
B.3 Equilibrium

In the Attorney Model, Equations (B12) and (B13) characterise the Equilibrium strategies for Client 1 and Client 1’s Attorney. Since the Equilibrium outcome is symmetric, it is the case that Equations (B35) and (B36) below, characterise the Equilibrium strategies for Client 2 and Client 2’s Attorney:

\[ X_2^* = \frac{2k(2\pi_2 + \pi_1) - (z_2 - z_1) - \frac{3}{2k}}{6k} \]  \quad (B35)
\[ e_2^* = e_2^{b^*} = \frac{2k(2\pi_2 + \pi_1) - (z_2 - z_1) - \frac{3}{2k}}{6} \]  \quad (B36)

Thus, the Subgame Perfect Nash Equilibrium in the form:

\( \left( (e_1^{s,a \ast}, e_1^{b,a \ast}, X_1^\ast), (e_2^{s,a \ast}, e_2^{b,a \ast}, X_2^\ast) \right) \)

is:

\[ \left( \left( \frac{2k(2\pi_1 + \pi_2) - (z_1 - z_2) - \frac{3}{2k}}{6}, \frac{2k(2\pi_1 + \pi_2) - (z_1 - z_2) - \frac{3}{2k}}{6}, \frac{2k(2\pi_1 + \pi_2) - (z_1 - z_2) - \frac{3}{2k}}{6k} \right), \left( \frac{2k(2\pi_1 + \pi_2) - (z_2 - z_1) - \frac{3}{2k}}{6}, \frac{2k(2\pi_1 + \pi_2) - (z_2 - z_1) - \frac{3}{2k}}{6}, \frac{2k(2\pi_1 + \pi_2) - (z_2 - z_1) - \frac{3}{2k}}{6k} \right) \right) \]  \quad (37)

In the Solicitor Barrister Model, Equations (B30), (B31), (B32) and (B33) characterise the Equilibrium Strategies for Client 1, Client 1’s Solicitor and Client 1’s Barrister. Again, as the Equilibrium outcome is symmetric, Equations (B38) to (B41) below characterise the Equilibrium Strategies for Client 2, Client 2’s Solicitor and Client 2’s Barrister:

\[ X_2^* = \frac{k^2(2\pi_2 + \pi_1) - k(z_2 - z_1) - \frac{3}{2}}{3k^2} \]  \quad (B38)
\[ Y_2^* = \frac{k^2(2\pi_1 + \pi_2) - 2k(z_2 - z_1) - 3}{3k^2} \]  \quad (B39)
\[ e_2^* = \frac{k(\pi_2 - \pi_1) + (z_2 - z_1) + \frac{3}{k}}{3} \]  \quad (B40)
\[ e_2^{b^*} = \frac{[k(2\pi_2 + \pi_1) - 2(z_2 - z_1) - \frac{3}{k}]}{3} \]  \quad (B41)
Thus, the Subgame Perfect Nash Equilibrium, in the form:

\[
\begin{pmatrix}
  e_1^*, & e_2^* \\
  X_1^*, & Y_1^* \\
  e_2^*, & e_2^* \\
  X_2^*, & Y_2^*
\end{pmatrix}
\]

is:

\[
\begin{pmatrix}
  \frac{k(\pi_1 - \pi_2) + (z_1 - z_2) + \frac{4}{3}}{3}, & \frac{k(2\pi_2 + \pi_1) - 2(z_1 - z_2) - \frac{4}{3}}{3} \\
  \frac{k^2(2\pi_1 + \pi_2) - k(z_1 - z_2) - \frac{4}{3}}{3}, & \frac{k(2\pi_2 + \pi_1) - 2(z_1 - z_2) - \frac{4}{3}}{3} \\
  \frac{k(\pi_2 - \pi_1) + (z_2 - z_1) + \frac{4}{3}}{3}, & \frac{k(2\pi_2 + \pi_1) - 2(z_1 - z_2) - \frac{4}{3}}{3} \\
  \frac{k^2(2\pi_2 + \pi_1) - k(z_2 - z_1) - \frac{4}{3}}{3}, & \frac{k(2\pi_1 + \pi_2) - 2(z_2 - z_1) - \frac{4}{3}}{3}
\end{pmatrix}
\]

(B42)
This Appendix provides the solution to the Model using the specification outlined in Chapter 4 using the following specification for the function $F(\bullet)$:

$$F(\bullet) = Pr(1 \text{ Wins}) = \left[k\left(z_1(1 + e_1^s + e_1^b) - z_2(1 + e_2^s + e_2^b)\right)\right] + \frac{1}{2}$$  \hspace{1cm} (C1)

All other aspects remain the same.

C.1 Attorney Model

Consider the Client’s problem as:

$$\max_{X_i,e_i^s,e_i^b} \left[ k(z_i(1 + e_i) - z_{-i}(1 + e_{-i})) + \frac{1}{2} \right] (\pi_i - X_i)$$

s.t.

$$e_i = e_i^s + e_i^b$$

$$(e_i^s, e_i^b) \in \arg \max \left[ k(z_i(1 + e_i) - z_{-i}(1 + e_{-i})) + \frac{1}{2} \right] (X_i) - \frac{1}{2} ((e_i^s)^2 + (e_i^b)^2)$$

Take Client 1 to be the representative client. Client 1’s problem can be solved using Backward Induction. Therefore, start by consider Client 1’s Attorney’s problem:

$$\max_{e_1^s,e_1^b} \left[ k(z_1(1 + e_1^s + e_1^b) - z_2(1 + e_2^s + e_2^b)) + \frac{1}{2} \right] (X_1) - \frac{1}{2} ((e_1^s)^2 + (e_1^b)^2)$$  \hspace{1cm} (C3)

The First Order Conditions are:

$$kz_1X_1 = e_1^s$$  \hspace{1cm} (C4)

$$kz_1X_1 = e_1^b$$  \hspace{1cm} (C5)

$$\therefore e_1 = e_1^s + e_1^b = 2kz_1X_1$$  \hspace{1cm} (C6)
Now, substitute Equation (C6) into Client 1’s problem. Therefore, Client 1’s problem is now:

$$\max_{X_1} \left[ k(z_1(1 + e_1^2 + e_1^k) - z_2(1 + e_2^2 + e_2^k)) + \frac{1}{2} \right] (\pi_1 - X_1)$$

s.t.

$$e_1 = 2kz_1X_1$$

(C7)

Solving Equation (C7) for $X_1$, the First Order Conditions are:

$$2k^2z_1^2\pi_1 - \left[ k(z_1(1 + 4kz_1X_1) - z_2(1 + e_2^2)) + \frac{1}{2} \right] = 0$$

(C8)

Rearranging Equation (C8):

$$X_1 = \frac{2k^2z_1^2\pi_1 - k(z_1 - z_2) + kze_2 - \frac{1}{2}}{4k^2z_1^2}$$

(C9)

Substitute Equation (C9) into Equation (C6):

$$e_1 = \frac{2kz_1^2\pi_1 - (z_1 - z_2) + ze_2 - \frac{1}{2k}}{2z_1}$$

(C10)

By Symmetry:

$$e_2 = \frac{2kz_2^2\pi_2 - (z_2 - z_1) + z_1e_1 - \frac{1}{2k}}{2z_2}$$

(C11)

Solving Equations (C10) and (C11) simultaneously yields:

$$e_1^* = \frac{2k^2(2z_1^2\pi_1 + z_2^2\pi_2) - k(z_1 - z_2) - \frac{3}{2}}{3kz_1}$$

(C12)

$$e_2^* = \frac{2k^2(2z_2^2\pi_2 + z_1^2\pi_1) - k(z_2 - z_1) - \frac{3}{2}}{3kz_2}$$

(C13)
Substituting Equation (C13) into Equation (C9) yields:

\[ X_1^* = \frac{2k(2z_1^2\pi_1 + z_2^2\pi_2) - (z_1 - z_2) - \frac{3}{2k}}{3kz_1^2} \]  
(C14)

Substituting Equation (C14) into Equations (C4) and (C5):

\[ \epsilon_1^s = \epsilon_1^b = \frac{2k^2(2z_1^2\pi_1 + z_2^2\pi_2) - k(z_1 - z_2) - \frac{3}{2}}{6kz_1} \]  
(C15)

It can easily be verified that:

\[ \epsilon_1^s + \epsilon_1^b = 2kX_1^* = \frac{2k(2z_1^2\pi_1 + z_2^2\pi_2) - (z_1 - z_2) - \frac{3}{2k}}{3z_1} \]  
(C16)
C.2 SOLICITOR BARRISTER MODEL

Again consider the Client’s problem as:

\[
\max_{X_i,e_i^s,e_i^b} \left[ k(z_i(1 + e_i) - z_{-i}(1 + e_{-i})) + \frac{1}{2} \right](\pi_i - X_i)
\]

\[s.t.
\]

\[
e_i = e_i^s + e_i^b
\]

\[
(e_i^s, Y_i) \in \arg \max \left[ k(z_i(1 + e_i) - z_{-i}(1 + e_{-i})) + \frac{1}{2} \right](X_i - Y_i) - \frac{1}{2}(e_i^s)^2
\]

\[
(e_i^b) \in \arg \max \left[ k(z_i(1 + e_i) - z_{-i}(1 + e_{-i})) + \frac{1}{2} \right](Y_i) - \frac{1}{2}(e_i^b)^2
\]

Take Client 1 to be the representative client. Client 1’s problem can be solved using Backward Induction. Since Client 1 hires the Solicitor and (through the Solicitor) the Barrister, the problem must be solved by starting at the Barrister’s Problem:

Client 1’s Barrister’s problem is:

\[
\max_{e_i^b} \left[ k(z_1(1 + e_1) - z_2(1 + e_2)) + \frac{1}{2} \right](Y_1) - \frac{1}{2}(e_i^b)^2
\]

\[s.t.
\]

\[
e_i = e_i^s + e_i^b
\]

\[
(e_i^b) \in \arg \max \left[ k(z_1(1 + e_1) - z_2(1 + e_2)) + \frac{1}{2} \right](Y_1) - \frac{1}{2}(e_i^b)^2
\]

The First Order Condition is:

\[
kz_1Y_1 = e_1^b
\]

Now, consider Client 1’s Solicitor’s Problem:

\[
\max_{e_i^s,Y_i} \left[ k(z_1(1 + e_1) - z_2(1 + e_2)) + \frac{1}{2} \right](X_1 - Y_1) - \frac{1}{2}(e_i^s)^2
\]

\[s.t.
\]

\[
e_i = e_i^s + e_i^b
\]

\[
(e_i^s,Y_i) \in \arg \max \left[ k(z_1(1 + e_1) - z_2(1 + e_2)) + \frac{1}{2} \right](X_1 - Y_1) - \frac{1}{2}(e_i^s)^2
\]

Substituting Equation (C19) into the Solicitor’s problem (Equation (C20)) and
solving, the following First Order Conditions are obtained:

\[ k z_1 (X_1 - Y_1) = e^*_1 \]  \hspace{1cm} (C21)

\[ k^2 z_1^2 (X_1 - Y_1) - \left[ k(z_1(1 + e^*_1 + k z_1 Y_1) - z_2(1 + e_2)) + \frac{1}{2} \right] = 0 \]  \hspace{1cm} (C22)

Solving Equations (C21) and (C22) simultaneously yields:

\[ e^*_1 = \frac{k z_1^2 X_1 - z_2 e_2 + (z_1 - z_2) + \frac{1}{2k}}{z_1} \]  \hspace{1cm} (C23)

\[ Y_1 = \frac{z_2 e_2 - (z_1 - z_2) - \frac{1}{2k}}{k z_1^2} \]  \hspace{1cm} (C24)

Substituting Equation (C24) into Equation (C19) yields:

\[ e^b_1 = \frac{z_2 e_2 - (z_1 - z_2) - \frac{1}{2k}}{z_1} \]  \hspace{1cm} (C25)

Using Equation (C23) and (C25):

\[ e_1 = e^*_1 + e^b_1 = k z_1 X_1 \]  \hspace{1cm} (C26)

Now, Using Equations (C24) and (C26), consider Client 1's problem:

\[ \max_{X_1} \left[ k(z_1(1 + e_1) - z_2(1 + e_2)) + \frac{1}{2} \right] \left( \pi_1 - X_1 \right) \]

s.t.

\[ e_1 = e^*_1 + e^b_1 = k z_1 X_1 \]

\[ Y_1 = \frac{z_2 e_2 - (z_1 - z_2) - \frac{1}{2k}}{k z_1^2} k^2 \]

Solving Equation (C27), the following First Order Condition is obtained:

\[ X_1 = \frac{k^2 z_1^2 \pi_1 - k(z_1 - z_2) + k z_2 e_2 - \frac{1}{2}}{2k^2 z_1^2} \]  \hspace{1cm} (C28)
Substituting Equation (C28) into Equation (C26):

\[ e_1 = \frac{k z_1^2 \pi_1 - (z_1 - z_2) + k z_2 e_2 - \frac{1}{2k}}{2z_1^2} \]  
(C29)

By Symmetry:

\[ e_2 = \frac{k z_2^2 \pi_2 - (z_2 - z_1) + k z_1 e_1 - \frac{1}{2k}}{2z_2^2} \]  
(C30)

Solving Equations (C29) and (C30) (as best response functions):

\[ e_1^* = \frac{k 2z_1^2 \pi_1 + z_2^2 \pi_2 - (z_1 - z_2)^2}{3z_1} \]  
(C31)

\[ e_2^* = \frac{k 2z_2^2 \pi_2 + z_1^2 \pi_1 - (z_2 - z_1)^2}{3z_2} \]  
(C32)

Substitute Equation (C32) into Equation (C24) and Equation (C28):

\[ X_1^* = \frac{k (2z_1^2 \pi_1 + z_2^2 \pi_2) - (z_1 - z_2) - \frac{3}{2k}}{3k z_1^2} \]  
(C33)

\[ Y_1^* = \frac{k (z_1^2 \pi_1 + 2z_2^2 \pi_2) - 2(z_1 - z_2) - \frac{3}{k}}{3k z_1^2} \]  
(C34)

Substituting Equations (C33) and (C34) into Equations (C19) and (C23):

\[ e_1^* = \frac{k (z_1^2 \pi_1 - z_2^2 \pi_2) + (z_1 - z_2) - \frac{3}{2k}}{3z_1} \]  
(C35)

\[ e_1^* = \frac{k (z_1^2 \pi_1 + 2z_2^2 \pi_2) - 2(z_1 - z_2) - \frac{3}{k}}{3z_1} \]  
(C36)

Note that it is a matter of simple algebra to show that:

\[ e_1^* + e_1^* = k z_1 X_1^* = \frac{k z_1^2 \pi_1 - (z_1 - z_2) + k z_2 e_2 - \frac{1}{2k}}{2z_1^2} \]  
(C37)
C.3 Equilibrium

In the Attorney Model, Equations (C14) and (C15) characterise the Equilibrium strategies for Client 1 and Client 1’s Attorney respectively. Since the Equilibrium outcome is symmetric, it is the case that Equations (C38) and (C39) below, characterise the Equilibrium strategies for Client 2 and Client 2’s Attorney respectively:

\[
X^*_2 = \frac{2k(2z_2^2\pi_2 + z_1^2\pi_1) - (z_2 - z_1) - \frac{3}{2k}}{3kz_2^2} \quad \text{(C38)}
\]

\[
e^*_2 = e^*_2 = \frac{2k(2z_2^2\pi_2 + z_1^2\pi_1) - k(z_2 - z_1) - \frac{3}{2}}{6kz_2} \quad \text{(C39)}
\]

Thus, the Subgame Perfect Nash Equilibrium in the form:

\[
(\left( e^*_1, a^*_1, X^*_1 \right), \left( e^*_2, a^*_2, X^*_2 \right))
\]

is:

\[
\left( \begin{array}{c}
\frac{2k^2(2z_2^2\pi_2 + z_1^2\pi_2) - k(z_2 - z_1) - \frac{3}{2}}{6kz_1}, \\
\frac{2k^2(2z_2^2\pi_2 + z_1^2\pi_2) - k(z_2 - z_1) - \frac{3}{2}}{6kz_2}, \\
\frac{2k^2(2z_2^2\pi_2 + z_1^2\pi_1) - k(z_2 - z_1) - \frac{3}{2}}{3kz_2^2}
\end{array} \right)
\]

\[
\left( \begin{array}{c}
\frac{2k^2(2z_2^2\pi_2 + z_1^2\pi_2) - k(z_2 - z_1) - \frac{3}{2}}{6kz_1}, \\
\frac{2k^2(2z_2^2\pi_2 + z_1^2\pi_2) - k(z_2 - z_1) - \frac{3}{2}}{6kz_2}, \\
\frac{2k^2(2z_2^2\pi_2 + z_1^2\pi_1) - k(z_2 - z_1) - \frac{3}{2}}{3kz_2^2}
\end{array} \right) \quad \text{(C40)}
\]

In the Solicitor Barrister Model, Equations (C32), (C34), (C35) and (C36) characterise the Equilibrium Strategies for Client 1, Client 1’s Solicitor and Client 1’s Barrister. Again, as the Equilibrium outcome is symmetric, Equations (C41) to (C44) below characterise the Equilibrium Strategies for Client 2, Client 2’s Solicitor and Client 2’s Barrister respectively:

\[
X^*_2 = \frac{k(2z_2^2\pi_2 + z_1^2\pi_1) - (z_2 - z_1) - \frac{3}{2k}}{3kz_2^2} \quad \text{(C41)}
\]

\[
Y^*_2 = \frac{k(z_2^2\pi_2 + 2z_1^2\pi_1) - 2(z_2 - z_1) - \frac{3}{k}}{3kz_2^2} \quad \text{(C42)}
\]

\[
e^*_2 = \frac{k(z_2^2\pi_2 - z_1^2\pi_1) + (z_2 - z_1) - \frac{3}{2k}}{3z_2} \quad \text{(C43)}
\]

\[
e^*_2 = \frac{k(z_2^2\pi_2 + 2z_1^2\pi_1) - 2(z_2 - z_1) - \frac{3}{k}}{3z_2} \quad \text{(C44)}
\]
Thus, the Subgame Perfect Nash Equilibrium, in the form:

\[
\left( \begin{array}{c}
  e_1^*,
  e_1^*
  \\
  X_1^*,
  Y_1^*
  \\
  e_2^*,
  e_2^*
  \\
  X_2^*,
  Y_2^*
\end{array} \right)
\]

is:

\[
\left( \begin{array}{c}
  k\left( z_1^2\pi_1 - z_2^2\pi_2 \right) + (z_1 - z_2) - \frac{3}{\pi} \left( z_1 \right),
  k\left( z_1^2\pi_1 + 2z_2^2\pi_2 \right) - 2(z_1 - z_2) - \frac{3}{\pi} \left( z_2 \right)
  \\
  k\left( 2z_1^2\pi_1 + z_2^2\pi_2 \right) - (z_1 - z_2) - \frac{3}{\pi} \left( z_1 \right),
  k\left( z_1^2\pi_1 + 2z_2^2\pi_2 \right) - 2(z_1 - z_2) - \frac{3}{\pi} \left( z_2 \right)
  \\
  k\left( z_2^2\pi_2 - z_1^2\pi_1 \right) + (z_2 - z_1) - \frac{3}{\pi} \left( z_1 \right),
  k\left( z_2^2\pi_2 + 2z_1^2\pi_1 \right) - 2(z_2 - z_1) - \frac{3}{\pi} \left( z_1 \right)
  \\
  k\left( 2z_2^2\pi_2 + z_1^2\pi_1 \right) - (z_2 - z_1) - \frac{3}{\pi} \left( z_1 \right),
  k\left( z_2^2\pi_2 + 2z_1^2\pi_1 \right) - 2(z_2 - z_1) - \frac{3}{\pi} \left( z_1 \right)
\end{array} \right)
\]

(C45)
Appendix D
Proof of Propositions 2 and 3

For ease of reference, recall:

The probability that justice is achieved under the Attorney system is:

\[ Pr(1 \text{ wins} | z_1 \geq z_2) = \frac{k}{3}[2k(\pi_1 - \pi_2) + (z_1 - z_2)] + \frac{1}{2} \] (D1)

The probability that justice is achieved under the Solicitor-Barrister System is:

\[ Pr(1 \text{ wins} | z_1 \geq z_2) = \frac{k}{3}[k(\pi_1 - \pi_2) + (z_1 - z_2)] + \frac{1}{2} \] (D2)

D.1 Proof of Proposition 2

**Proposition 2:** Consider parameters of the model such that:

\[ z_1 > z_2 \] (D3 - A)
\[ \pi_1 < \pi_2 \] (D3 - B)

Under these parameters, the Solicitor-Barrister system is more likely to achieve social justice.

This implies that Client 1’s probability of winning is higher under the Solicitor-Barrister system compared to the Attorney system.

Therefore, using Equations (D3), it must be the case that Equation (D2) is greater than Equation (D1).
Begin with Equation (D3-B):

\[ \pi_1 < \pi_2 \]
\[ \pi_1 - \pi_2 < 0 \]

Noting that \( k > 0 \), multiply both sides by \( k \):

\[ k(\pi_1 - \pi_2) < 0 \] (D4)

Now, add \( k(\pi_1 - \pi_2) \) to both sides of Equation (D4):

\[ 2k(\pi_1 - \pi_2) < k(\pi_1 - \pi_2) \] (D5)

Adding \( (z_1 - z_2) \) to both sides of Equation (D5) and then multiplying both sides by \( \frac{k}{3} \) noting again that \( k > 0 \):

\[ \frac{k}{3}[2k(\pi_1 - \pi_2) + (z_1 - z_2)] < \frac{k}{3}[k(\pi_1 - \pi_2) + (z_1 - z_2)] \]
\[ \frac{k}{3}[2k(\pi_1 - \pi_2) + (z_1 - z_2)] + \frac{1}{2} < \frac{k}{3}[k(\pi_1 - \pi_2) + (z_1 - z_2)] + \frac{1}{2} \] (D6)

Note the Left Hand Side of Equation (D6) is the probability that the Client 1 wins under the Attorney system (Equation (D1)). The Right Hand Side of Equation (D6) is the probability that Client 1 wins under the Solicitor-Barrister system (Equation (D2)). Thus, the Probability that Client 1 wins under the Solicitor-Barrister system is higher. Accordingly, since \( z_1 > z_2 \), the probability that justice is achieved is higher under the Solicitor-Barrister system.
D.2 Proof of Proposition 3

**Proposition 3:** Consider parameters of the model such that:

\[ z_1 > z_2 \]  \hspace{1cm} (D7 - A)  
\[ \pi_1 > \pi_2 \]  \hspace{1cm} (D7 - B)

Under these parameters, the Attorney system is more likely to achieve social justice.

This implies that Client 1’s probability of winning is higher under the Attorney system compared to under the Solicitor-Barrister system.

Therefore, using Equations (D7), it must be the case that Equation (D1) is greater than Equation (D2).

Begin with Equation (D7-B):

\[ \pi_1 > \pi_2 \]
\[ \pi_1 - \pi_2 > 0 \]

Noting that \( k > 0 \), multiply both sides by \( k \):

\[ k(\pi_1 - \pi_2) > 0 \]  \hspace{1cm} (D8)

Now, add \( k(\pi_1 - \pi_2) \) to both sides of Equation (D8):

\[ 2k(\pi_1 - \pi_2) > k(\pi_1 - \pi_2) \]  \hspace{1cm} (D9)

Adding \( (z_1 - z_2) \) to both sides of Equation (D10) and then multiplying both sides
by $\frac{k}{3}$ noting again that $k > 0$:

\[ 2k(\pi_1 - \pi_2) + (z_1 - z_2) > k(\pi_1 - \pi_2) + (z_1 - z_2) \]

\[ \frac{k}{3}[2k(\pi_1 - \pi_2) + (z_1 - z_2)] > \frac{k}{3}[k(\pi_1 - \pi_2) + (z_1 - z_2)] \]

\[ \frac{k}{3}[2k(\pi_1 - \pi_2) + (z_1 - z_2)] + \frac{1}{2} > \frac{k}{3}[k(\pi_1 - \pi_2) + (z_1 - z_2)] + \frac{1}{2} \]  \hspace{1cm} (D11)

Note the Left Hand Side of Equation (D11) is the probability that the Client 1 wins under the Attorney system (Equation (D1)). The Right Hand Side of Equation (D11) is the probability that Client 1 wins under the Solicitor-Barrister system (Equation (D2)). Thus, the Probability that Client 1 wins under the Attorney system is higher. Accordingly, since $z_1 > z_2$, the probability that justice is achieved is higher under the Attorney system.
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