Is Your Attorney a "Pettifogger"? Asymmetric Information Between Attorneys and Litigants

Erasmus School of Economics

Name Student: Justin J. Aenmey

Student ID number: 499714

Supervisor: dr. Josse Delfgaauw

Second Assessor: dr. Bauke Visser

Date final version: May 1, 2023

MASTER THESIS

ECONOMICS OF MARKETS & ORGANIZATIONS

ECONOMICS & BUSINESS

Abstract

This paper is on hidden characteristics and contingent-fee contracts of US attorneys. We develop a model of a competitive economy in which attorneys differ in their potential to win litigation lawsuits and their ability to forecast the merits of lawsuits, and evaluate the efficiency of contingent-fee contracts under different informational assumptions. When litigants are uniformed on the ability of their attorney, strong attorneys have an incentive to contract with litigants that possess easy lawsuits and avoid contracting with difficult ones. Hence, adverse selection seems plausible for judicial systems where contingent-fee contracts are permitted. Policy makers should reckon this detrimental effect to the economy besides the arguments in favor of it (e.g., limiting moral hazard problems and better judicial access).

Keywords: *Asymmetric information, hidden characteristics, contingent fee contracts*

Table of contents

Is Your Attorney a "Pettifogger"? Asymmetric Information Between Attorneys and Litigants[*]

Justin Aenmey[†]

Abstract

This paper is on hidden characteristics and contingent-fee contracts of US attorneys. We develop a model of a competitive economy in which attorneys differ in their potential to win litigation lawsuits and their ability to forecast the merits of lawsuits, and evaluate the efficiency of contingent-fee contracts under different informational assumptions. When litigants are uniformed on the ability of their attorney, strong attorneys have an incentive to contract with litigants that possess easy lawsuits and avoid contracting with difficult ones. Hence, adverse selection seems plausible for judicial systems where contingent-fee contracts are permitted. Policy makers should reckon this detrimental effect to the economy besides the arguments in favor of it (e.g., limiting moral hazard problems and better judicial access).

Keywords: *Asymmetric information, hidden characteristics, contingent fee contracts*

I. Introduction

Why is it so difficult to find a trustworthy personal injury lawyer in the United States? Why are Big Four (tax) attorneys paid so well compared to their non-Big Four competitors? Are 'expensive' attorneys more likely to win lawsuits than 'cheap' attorneys? Why do some US law firms make use of billboard advertisements while others do not? Do 'no cure, no pay' contracts necessarily signal strength to clients?

These questions have in common the information asymmetry between attorneys and litigants. While attorneys are familiar with their level of expertise and can estimate the merits of each specific case, clients generally only observe outcomes. Often, even after a lawsuit, clients cannot perfectly deduct whether their legal representative was skillful or that their case was just plain and simple. It embodies a state of affairs where the expert possesses more

information on the quality of their service compared to consumers. Therefore, legal services are considered to be credence goods (Darby and Karni, 1973; Duller and Kerschbamer, 2006).

Can this information asymmetry be resolved, and if so, how? This article develops a simple contracting model in a market for attorneys with contingent fee (CF) contracts and fixed fee (FF) contracts. CF-contracts, often referred to as 'no cure, no pay', is a type of fee arrangement where legal fees are only payable if there is a favorable result (e.g., the client wins their lawsuit). By contrast, FF-contracts stipulate that clients always pay their attorney, even if their case is lost in court. The game consists of a large number of attorneys that are either of type 'strong' or 'weak', and a market of litigants with 'easy' cases and 'difficult' cases that decide to sue a third party for compensatory damages. Compared to weak attorneys, strong attorneys have the ability to distinguish between case types and win difficult cases with a higher probability in court. We assume that there is an insufficient supply of strong attorneys, yet sufficiently large to represent the subset of litigants with difficult cases. Specifically, we explore whether CF-contracts are an effective mechanism to signal strength to litigants and whether it is prone to adverse selection under different informational assumptions.

When litigants are completely informed, we find that adverse selection does not occur. Litigants pay attorneys their fair share and strong attorneys earn a rent for providing more compensatory damages in difficult lawsuits. However, when litigants are partially uninformed or completely uninformed, strong attorneys have an incentive to contract with easy case clients and adverse selection is the mere result. By exception, if litigants are informed on the ability of attorneys, strong attorneys are willing to represent either case type for a relatively high FF-contract.

We think that our model makes two important arguments related to the real world. First, attorneys advertise to gain reputation. If litigants perceive this as credible and anticipate that this attorney is rather strong, litigants are willing to pay a premium for their legal service since they may provide for more compensatory damages in case their lawsuit is won in court. Failing to stand out from the competition may be perceived as weak such that litigants are only willing to pay the market price. Second, we argue that CF-contracts are fructuous for strong attorneys but detrimental to social welfare. Since CF-contracts shift the risk of non-payment to attorneys, strong attorneys have an incentive to represent litigants with easy cases instead of contracting with difficult ones. Adverse selection is the mere result and difficult clients are represented by relatively weaker attorneys.

Information asymmetry for credence goods received considerable attention by researchers, yet theoretical analyses related to the legal field is modest at best. This is even though scholars

frequently relate to legal services as a core example of credence goods (see e.g., Wolinksy, 1995; Duller and Kerschbamer, 2006). Existing work focuses on principal-agent models where attorneys' effort is unobservable (i.e., moral hazard). The general view is that CF-contract are effective at inducing attorneys to undertake efficient effort levels. Danzon (1983) argues that CF-contracts induce attorneys to choose effort levels that would be chosen by a fully informed client using hourly wage contracts. Emons and Garoupa (2006) conclude that CF-contracts are also strictly superior to conditional fee contracts (i.e., where the attorney is a paid a bonus besides their fixed fee or hourly fee arrangement). Effort levels under contingent fees are tied to the adjudicated amount at stake, while conditional fee only provide incentives for the upscale premium, hence strictly less efficient. Dana and Spier (1993) suggest that CF-contracts discourage frivolous cases from going to court because attorneys face the investment risks. In other words, CF-contracts aligns the interests of the contracting parties and comes closest to where attorneys are the residual claimant. Santore and Viard (2001), therefore, argue that welfare can be increased if attorneys were allowed to purchase the rights to a client's legal claim. Although prohibited in most US states by ethical restrictions, this arrangement eliminates moral hazard and allows attorneys to earn positive economic rents.[1]

A distinguishing feature of our model is the focus for hidden characteristics of attorneys rather than evaluating moral hazard in contractual relationships. It allows us to better understand whether CF-contracts improve social welfare when litigants have no experience in the legal process of suing. The bite of the model is in weak attorneys' hesitance to offer CF-contracts to litigants since they are assumed to be uninformed on the merits of each case. As weak attorneys also win difficult cases with lower probability, competition among attorney types induce strong attorneys to hide their type and contract with litigants that possess relatively simple cases using CF-contracts. This is detrimental to the legal market because difficult cases are dropped by strong attorneys and take on by weaker attorneys, hence reducing social welfare.

Empirical studies regarding the relationship between attorney compensation and their performance are close to unexplored due to the absence of field data. To our best knowledge, McKee et al. (2007) is the only study that attempts to test existing theory empirically. In their laboratory setting, subjects took roles of either an attorney or a client. Clients first choose contracts, contingent fees or fixed fees, and the level of the fees. When the contract type is announced, attorneys choose an unobservable level of effort on a scale of 1-20 (target value)

---

[1] See also, Model Rules of Professional Conduct Rule 1.5: Fees (ABA, 2022).

and subsequently role a fair 20-sided die.[2] If the face of the die is less or equal to the target value, the client wins the case and loses vice versa. The experimental results bear the conjectures from theory, where the effort level increases as contingent fees rise. Clients tend to reject low contingent fees in favor of higher ones, and attorneys do not compete for contingent fees to reservation values to obtain cases even when unemployment is possible for them.

This paper suggests that adverse selection is more likely under CF-contracts than under FF-contracts or similar hourly fee arrangements. Policy makers should consider this implication in their legislation before adapting fee arrangements where attorneys are paid on a contingency basis. Specifically, this negative impact on social welfare should be compared with advantages that CF-contracts provide. For example, CF-contracts limit moral hazard in the attorney-client relationship and provide better access to the judicial system if fee-shifting rules do not apply.

The outline of the paper is as follows. Section II discusses how the paper relates to the existing literature. Section III describes the structure and setting of the model. In Section IV, we analyze the models through a series of propositions. In section V, we compare the results of models and consider it from a welfare perspective. Finally, section VI concludes.

II. Related Literature

A. On the US legal profession

US case law is littered with lawsuits where litigants were awarded exorbitant (personal injury or tort) damages. Perhaps the most famous example is McDonalds' coffee lawsuit where litigant Stella Lieback received approximately $2.7 million in punitive damages after her failed attempt to remove the lid of her McDonalds' coffee cup which led to third degree-burns (*Lieback v. McDonalds' Corporation*, 1992). Or Terrence Dickson who had just finished robbing a house but was not able to leave the garage after the malfunctioning of an automatic door opener. He was locked for eight days and subsisted on a case of Pepsi and dry dog food, sued the homeowner's insurance company, and was awarded $500,000 (*Dickson v. Allstate Insurance Company*, 1998). Or the famous Ford Pinto case, where Richard Grimshaw sued Ford Motor Company for its erroneous and dangerous design of the Pinto hatchback. Crash tests showed that any rear-end collisions with the Pinto above a speed of 21.5 miles per hour results in instant flames at the rear installed fuel system. The Grimshaw family was awarded

---

[2] Attorneys' costs of representing the client for each level is commonly known (i.e., no uncertainty on attorneys' type).

well over $125,000,000 for wrongful death, personal injury, and product liability (*Grimshaw v. Ford Motor Company*, 1981).

In each of these examples, litigants hired an attorney to represent themselves in court and to sue a third party for compensatory damages. Needless to state, litigants seek attorneys that have the highest probability of success and those that maximize awarded compensatory damages. Especially under the US judicial system, expertise and experience of attorneys may be of pivotal importance to convince the court of their clients' righteousness since (most) evidence is presented at trial (contrary to the civil law judicial system in e.g., European countries). For instance, at trial attorneys are given the opportunity to present facts and can (cross-) examine witnesses to convince the court of their good cause. When the attorney blunders or makes preventable mistakes, the client bears the costs of forgone compensatory damages.

A general consensus in the literature exists that the US legal profession can be divided into two hemispheres: elite attorneys and ordinary lawyers (Heinz and Laumann, 1985; Abel, 1988; Hair et al., 1999). Elite attorneys often graduate from elite universities (e.g., Yale, Stanford, Chicago University), practice law at large law firms, and represent big companies and wealthy clients. Ordinary lawyers, on the other hand, are part of small law firms or practice alone ('solos'), represent one-shot clients, and deal with relatively simple lawsuits. Perhaps the most compelling difference between these counterparts is the gap in received compensation. According to the American Bar Association (ABA) (2022), the median wage at some big law firms in major cities is $215,000 compared to the median wage of $148,910 for *all* attorneys (not including profits for law partners). Such pay disparity may suggest that this is related to the quality of representation which ultimately affects litigants' probability to win lawsuits.

What makes the difference between 'good' and 'bad' attorneys? More expert attorneys are generally more able to influence judges in their decision-making process (Haire et al., 1999). For example, expert attorneys may present legal arguments in persuasive storytelling manners that favors their client's case. A vast body of legal literature and testimonials from judges shows that this, at least in some lawsuits, affects judges' decisions (Merrit 1990; Epstein and Kobylka, 1993; Coffin 1994; Knight and Epstein, 1996). More experienced attorneys may also develop a feel for appealing to judges' emotions (McGuire, 1995; Kritzer, 2002). This allows them to bear in mind judges' preconceptions, beliefs, and ideology in framing legal arguments. For example, judges tend to be biased against defendants with 'deep pockets' in product liability claims or government cases, or physicians in malpractice (Bovbjerg et al., 1991). In addition, attorneys may develop a trustworthy reputation to which their representation signals injustice

or at least worthy arguments. Judges might be responsive to such signals and can favor clients' outcomes in court.

Furthermore, more able attorneys are good predictors of lawsuit outcomes. Fox and Birke (2002) argue that experienced attorneys excel in analyzing case's strengths and weaknesses which calibrates their judgement concerning the probability to win. Attorneys can use this at various stages vis-à-vis their client. Most obvious, attorneys can evaluate whether to represent clients with frivolous lawsuit instead of merit ones. This is paramount to estimating the monetary value of the lawsuit, fitting advice to clients, and especially the consideration whether to represent clients using fee structures that depend on favorable outcomes, like CF-contracts. More expert attorneys are also better at inferencing the probability of success appeal at a higher court. This allows them to make strategic calculations about whether to proceed with the trial or settle outside court.

There are, however, also studies that show that (experienced) attorneys are particularly overconfident concerning the lawsuits they represent. For example, Goodman-Delahunty et al. (2010) follow $n = 481$ litigation attorneys over-time and track whether attorneys' pre-set minimum goals were achieved after the final trial. Well over the majority of attorneys expressed confidence to meet their minimum goal (median estimate of 70%), yet only 32% matched this. Of the remaining lawsuits, 24% of the outcomes exceeded attorneys' pre-set goals and 44% were dissatisfactory. Especially, attorneys that reported confidence levels over 65% were biased towards overconfidence. Practical experience played no significant role in reporting either underconfidence or overconfidence.

Loftus and Wagenaar (1988) argue that attorneys' overconfidence is a way of attracting clients and keeping them convinced that their interests are properly served. Similarly, overconfidence may stimulate attorneys' performance in court or help convincing judges. Yet, more convincing is that attorneys suffer from self-serving bias that causes overconfidence in their prospective judgements as attorneys have, to some extent, control over the outcome of their lawsuit (Babock and Loewenstein, 1997). This implies that attorneys may incorrectly estimate the expected monetary value of the lawsuit, thereby possible advising clients to sue unwinnable or unprofitable cases.

B. Analysis of US attorneys' fee arrangements

The fee system in the United States is regulated on state level, yet clients can generally contract their (litigation) attorneys using hourly fee, fixed fee (FF), contingent fee (CF) arrangements, or a creative combination of these arrangements (Cf. Maurer et al., 1999; ABA,

2022). Hourly fee contracts are the traditional method to compensate attorneys for their representation whereby attorneys keep track of their billable hours and typically charge this on a periodical basis to their clients. Often during the first consultation attorneys provide a bandwidth of expected hours to work on the lawsuit such that clients are not saddled with unexpected costs after the trial.

Hourly fees can widely differ between attorneys and states. According to data from Clio (2022), attorneys charge between $150 and $500 per hour. Scholars suggests that hourly fees reflect to some extent the experience and skill of attorneys (Maurer et al., 1999; Haire et al., 1999). Although skillful attorneys may be relatively more expensive on an hourly basis, they are generally also more time-efficient and require less time to handle a lawsuit. There are, however, several concerns to this type of hourly fee arrangements. Well documented in the literature is the moral hazard problem that induce attorneys to charge more hours than worked or when attorneys accept to represent clients with cases that have slim to none win chances which is caused by the asymmetry in legal expertise (see e.g., Ross, 1991; Baird, 1994; Kritzer, 1994). While these type of practices are strictly prohibited under the governance code of the ABA (rule 1.5: Fees), the information asymmetry between attorneys and clients makes it hardly impossible to verify.

FF-contracts are comparable to hourly fee arrangements (Maurer et al., 1999). The only difference is that pre-arranged fixed fees are not subject to change after the final trial while under the hourly fee arrangement attorneys are allowed to deviate from the pre-discussed hourly bandwidth. Attorneys will typically charge a similar fixed fee that would otherwise have been billed under the hourly fee arrangement. At the same time, FF-contracts are also subject to moral hazard (see e.g., Dazon 1983). Now attorneys particularly have an incentive to 'shrink' instead of 'overbilling' their clients. This can be detrimental to clients when attorneys put too little effort in their preparation which may lead to losing the lawsuit. Yet, this moral hazard problem is limited by attorneys' reputational concerns as they do not want to be notorious for being a 'pettifogger' or losing lawsuits. Regardless, FF-contracts may still lead to the moral hazard problem where attorneys contract with clients that have cases that are impossible to win.

CF-contracts are typically referred to as 'no cure, no pay' or 'no win, no fee' contracts. This fee arrangement is commonly used in litigation such as personal injury suits, collection suits, tax cases, stockholder derivation suits, will contests, medical malpractice, wrongful dismissal, and breach of contract (Rhein, 1982; Kritzer, 2007). According to the ABA (2022), under such arrangement clients *only* pay the contingent fee to the attorney if the attorney handles a case 'successfully'. Successful results are generally stipulated as when the client is awarded

compensatory damages through judgment (in court) or settlement (outside court), but parties may also accord differently (e.g., contingencies based on awarded damages). The main characteristic of this arrangement is that the risk and benefit shifts to the attorney (Maurer et al., 1999). Under hourly and FF-contracts clients invest in the lawsuit in the hope that the awarded tort damages exceed the fee to be paid to the attorney. On the contrary, CF-contracts require attorneys to invest in the lawsuit by possible exceeding unpaid effort and forgone non-contingent outside options. In other words, attorneys serve as an insurer by bearing the risk of loss (Rhein, 1982)

Attorneys receive in return a fixed percentage of clients' awarded compensatory damages (ABA, 2022). While percentages may change across states, legal fields, and lawsuits, the average is often between $33^1/_3$-40% of the total compensatory damages awarded to the client. Percentages may even reach 50% if the is affirmed in appeal (Emons, 2000). This allows attorneys to receive compensations that constitute to a multiple of their ordinary hourly arrangement which can be excessive when millions of dollars are at dispute.[3] Yet, this type of arrangement naturally comes with the risk that attorneys are not paid even though they invested a considerable amount of time in the lawsuit and despite their legal service was in fact faultless. Schneyder (1998) argues that the premium collected under CF-contract compensates for lawsuits that are lost. Attorney can therefore diversify risks by taking a portfolio of lawsuits and still earn a predictable income stream.

In litigation, contingent fees are by large the most common fee arrangement to compensate attorneys. Kritzer (1990) reports that 59% of litigants that were plaintiff in US lawsuits paid their attorney on a contingent-fee basis compared to only 7% for organizational litigants. There is, however, great variability in distribution among different legal fields. For example, for individual litigants in tort cases, between 87-96% use contingent fees, see also Garoupa and Gomaz-Pomar (2007). For contract dispute cases, around 53% pay their attorney on a contingency basis, whereas for divorce or domestic issues the use of CF-contracts seems to be relatively low. With respect to corporate litigants, CF-contracts are mostly used for debt collection cases.

Although CF-contracts are frequently used in US litigation cases, it is often criticized by several judicial experts (see e.g., Cohen, 1916; Lieberman, 1978; Brickman, 1989). For example, they argue that attorneys are the ones that bear the drawbacks of the arrangement

---

[3] For instance, receiving $33^1/_3$% of the awarded damages of $300,000 and after spending 100 hours working for the lawsuit at $250 ($25,000) leads to a multiple of 4. Note, however, that losing the lawsuit implies a loss of $25,000.

while clients reap most benefits which constitutes to an unfair relationship. This is clearly reflected in *Fracasse v. Bent* (1972) where the Californian Supreme Court decided that clients with CF-contracts have the right to discharge their attorney in all situations with or without good cause. The discharged attorney is at that point only entitled to a 'reasonable' value of his services to the time of discharge ('*quantum meruit*') and logically loses his entitled contingent fee. What the attorney compensation is under *quantum meruit* varies considerably per state. In general, states adhere to the decision of the court in *Paolillo v. American Export Isbrandtsen Lines, Inc. (*1969*)* in which is stated that:

> *"The factors to be considered in answering the question [of what is the reasonable value of services rendered by the discharged attorney] are set out in Canon 12 of the Canons of Professional Ethics of the American Bar Association. They are: (1) time; (2) standing of the lawyer at the bar; (3) amount involved; (4) benefit to the client and (5) skill demanded."*

Courts in most states emphasize the relative importance of the time invested by the attorney and use the other factors to determine a fair hourly rate tailored to their experience and skill (Gill and Mealy, 1973). Yet, this requires attorneys, even under the CF-contracts, to keep track of their hours worked for clients. Failing to do so precludes attorneys from any compensation under *quantum meruit* (*Cavers v. Old National Bank & Union Trust,* 1932*)*. New York courts, however, often use a distinctive basis to determine the reasonable value of service rendered by discharged under CF-contracts. To calculate the compensation under *quantum meruit,* courts evaluate attorneys' contribution to the ultimate recovery. For example, in *Kodenksy v. Baruch Oil Corp. (*1957*)* the court determined that the services of the discharged attorney accounted for 21% of the total damages received when the original CF-contract stipulated $33^{1}/_{3}$%.

Other critics regarding CF-contracts are often not very well founded when considering economic theory. For example, some advocates of legal reform (i.e., prohibiting CF-contracts) argue that contingent-fee compensation constitute to an increase in frivolous lawsuits since plaintiffs bear no costs for suing. As demonstrated by several scholars (see e.g., Dana and Spier, 1993; Maurer at al., 1999), this argument is fallacious because it ignores attorneys' self-interest and costs of efforts which are commonly assumed under economic principal-agent theory. Furthermore, Brickman et al. (1994) criticize CF-contracts for being too lucrative for attorneys. They report that CF-contracts enable attorneys to earn virtually effective hourly rates of $30,000 for cases where there is *no* risk of losing. Hay (1996) shows that the argument of 'overpaid attorneys' has nothing to do with risk but with incentives. Although CF-contracts

enable attorneys to earn rents in excess of their opportunity costs, this is unavoidable for inducing the optimal effort level. Hence, the profit margins of attorneys would be the same even if litigation were riskless.

From an attorney's perspective, there are also benefits under CF-contract arrangements. As previously emphasized, CF-contracts can be lucrative compared to non-contingent arrangement if the awarded compensatory are large. Moreover, CF-contracts allow attorneys to take all necessary action in terms of their perceived required strategy. Clients are often hesitant to invest extra money in subpoenas, private investigators, or outside experts to gather more evidence which can potentially strengthen their case. Under hourly or FF-contracts these fees are namely paid on top of the attorney fee. Hence, attorneys forego legal actions that might be necessary to win the case. By contrast, under CF-contracts attorney can decide themselves since they bear the risks and costs.

More interesting are the benefits under CF-contracts from the perspective of the litigants. First, CF-contracts naturally align the interest of attorneys and litigants to some extend because the attorney has a monetary incentive to win the case (see e.g., Dana and Spier, 1993; MacDonald and Williams, 1995; Maurer et al., 1999). Attorneys have an incentive to work hard to recover their invested time and foregone outside options. This also converges risk attitudes of both parties because attorneys are not willing to represent clients with frivolous lawsuits which they otherwise would have represented under hourly contracts or FF-contracts. In other words, attorneys only take cases for which they believe that likelihood of winning is sufficient. Second, CF-contracts provide for accessibility to legal representatives (Gill and Mealy, 1973; Schneyder, 1998). Litigants that cannot afford upfront 'retainer fees' or legal aid in general, now have the option to hire an attorney. Particularly, this is important when litigants are sued by or want to sue large corporations or institutions that are more powerful in legal aid.

In spite of what preceded, CF-contracts also encompass certain disadvantages for litigants. Well documented in the literature is that attorneys have an incentive to prematurely solicit to settle the case (see e.g., Macdonald and Williams, 1995; Schneyder, 1998; Casagrande and Spallone, 2007). Settlements in litigations ensure that clients receive compensatory damages before court action begins but comes at the expense that settlement offers are (much) lower than damages awarded in court. Critics argue that attorneys CF-contracts encourage attorneys to settle when its contrary to clients' best interests. Particularly when clients are unfamiliar with case values and the required time that attorneys must invest in preparation, attorneys might solicit to settle the case which earns them 'quick money' but leaves clients with suboptimal compensatory damages.

Less commonly reported in the literature is that CF-contracts are not per se robust to bypassing inexperienced attorneys. For example, in competitive legal fields like personal injury, inexperienced attorneys that offer relatively expensive arrangements will be pushed out of the market by more experienced or more successful attorneys which requires them to compete at lower prices (Santore and Viard, 2001; Graves-Poller, 2015). That is, CF-contracts are in that case instrumental to gaining valuable legal experience, building credible case results, and testimonials for attorneys. This leaves clients vulnerable to inexperienced attorney errors that may cause to lose their lawsuit.

While CF-contracts are unique in its perspective to align the interest of attorneys and litigants, it is not robust to fee-shifting rules. Some statues or state laws require that the losing defendant in a legal matter pays for the legal costs of the prevailing party, which is contrary to the default American rule (ABA, 2022). For instance, consider a situation where a company gives a warranty on their product but fails to adhere to it. If the consumer sues the company and wins, the company is required pay for the legal costs of the consumer according to the federal state act (Magnus-Moss Warranty Act) even when their own attorneys is represented on a contingent fee basis. Hence, fee-shifting rules limit one of the core benefits of CF-contracts since losing the case does not result in non-payment. Fee shifting rules are default in common law Europe which alters the use of it for improving accessibility to the judicial system (Root, 2006).[4]

C. Asymmetric information and legal services as credence goods

Our paper is related to the literature on economics of information and adverse selection in markets. Pioneered by Akerlof (1970), information asymmetry between sellers and buyers for products or services that differ in quality can deteriorate the market. This can be illustrated by a simplified model. Consider a product that is available in two qualities (high and low) q, such that, $q \in \{H, L\}$, and where its availability on the market is determined by a respective distribution of probabilities α and $1 - \alpha$. Now consider that the valuation of the buyer, b^q, to buy the product is given by $b^H > b^L$ and that the valuation of the sellers, s^q, to sell their respective goods is given by $s^H > s^L$. When buyers are uninformed on the quality of the product, their average valuation is $\bar{b} = \alpha b^H + (1 - \alpha)b^L$. Yet, when $s^H > \bar{b}$, sellers with high

---

[4] In the United States (common law), the default rule is the American rule that constitutes that each party is required to compensate their own attorney according to their contract. The fee-shifting rule is an exceptions to the American rule and is only applicable if the Federal law states this or if agreed upon in a specific contract between parties.

quality products are unwilling to sell their product at the ask price of uninformed buyers. As a result of this information asymmetry, high quality sellers leave the market, and the market deteriorates as buyers with a high valuation cannot buy products of high quality.

Our paper is also closely related to the literature on signaling and screening models. First introduced by Spence (1973), signaling is an effective mechanism for uniformed agents to overcome information asymmetry through self-selection. The term 'signaling' refers to the possibility for informed individuals to credibly convey to uniformed individuals that they are of a specific type. More specifically, uninformed individuals learn the type of the informed individual in a separating equilibrium because the types of informed individuals choose different actions. This is contrary to a pooling equilibrium where different types do not choose different actions, hence there is no credibly signal that one can be of either type.

Our paper also relates to the literature on credence goods. This type of good is introduced by Darbi and Karni (1973) and refers to goods where its quality cannot be verified after the transaction. The classification exists next to ordinary goods, search goods, and experience goods that are formalized by Nelson (1970). At the core, credence goods are a result of information asymmetry between the buyer and seller where the quality cannot be credibly signaled or is purposely not shared by the seller. This leads to inefficient outcomes where the seller, often referred to as an expert, undertreats or overtreats depending on the service. For example, car mechanics might overtreat by unnecessary changing car parts since their clients are often uninformed on the state of their car. This is inefficient because the repair adds no benefits to the consumer but does involve costs. Or consider the opposite, where car mechanics undertreats by purposely repairing only parts of the problem such that buyers are forced to come back for new repairs.

After a theoretical formalization on credence goods by Dulleck and Kerschbamer (2006), the strand of literature received a considerable amount attention by scholars for field experiments. Recently, Gottschalk et al. (2020) present a field study that examines the heterogeneity in overtreatment for the Swiss dental care market. In the experiment, patients that did not require any treatments randomly visited 180 physicians and records received dental recommendations. The overall overtreat recommendation rate was 28% but significantly varied depending on patients' socio-economic status, competition among dentists, and dentists' waiting times. Schneider (2012) investigates overtreatment for the car repair sector and finds that more than half of mechanics' repairs are unnecessary, see also Wollinksy (1995). Balafoutas et al. (2013, 2017) document that taxi drivers act opportunistically by taking unnecessary long routes to increase the total fare. In Kerschbamer et al. (2016, 2019), computer

specialist overcharge on working time or replace unnecessary parts when they are informed that the repair costs are paid by insurance companies. Finally, field experiments in the market of financial advice or insurance advice show signs of mistreatments where the product does not match consumers' needs (see e.g., Inderst and Ottaviani, 2009, 2012; Anagol et al., 2007).

More related to our paper are models on credence goods for legal services. The predominant focus in this literature are principal-agent models where clients cannot observe attorneys' effort. Dana and Spier (1993) show that CF-contracts are an effective mechanism to prevent frivolous lawsuits from going to court. If attorneys are paid an hourly fee or a fixed fee, then they would have little incentive to reveal the merits of the case when the return is low. However, under CF-contracts, attorneys act in the interests of litigants by only pursuing cases that have a sufficiently high return. Likewise, Emons and Garoupa (2006) present evidence that CF-contracts are superior to conditional fee contracts (i.e., where attorneys are paid a bonus on top of their hourly fee after positive outcomes). For CF-contracts, attorneys strategically adjust their effort level on the adjudicated amount because they receive a fraction of the judgement. Since conditional fee contracts are independent of the adjudicated amount, the chosen effort levels are relatively lower and thus less efficient. Danzon (1983) argues that CF-contracts induce attorneys to undertake effort levels that would be chosen by fully informed litigants under hourly contracts. For risk averse litigants, the expected utility is also unambiguously higher with CF-contracts. In sharp contrast stands Emons (2000) which suggest that CF-contracts may lead to insufficient attorney effort whenever the case is underdeveloped. Especially when effort is observable, but the merits are not, he suggests that hourly fee contracts induce attorneys to take more efficient effort.

The above arguments are based upon the moral hazard problems where attorneys undertake inefficient effort levels under certain fee arrangements. This is to be contrasted with the intend of this paper where we study hidden characteristics (adverse selection) and not hidden actions of attorneys (moral hazard). Hence, we introduce different types of attorneys and study their optimal actions under price competition rather than a principal-agent setting. This implies that we assume that attorneys always exceed maximum effort which is a plausible assumption in competitive markets, such as the litigation market.

III. The Model

A. Information and preferences

We consider a large number of litigants that independently decide whether to hire an attorney to sue a third party for compensatory damages $X > 0$, or to not sue (i.e., clients need an attorney to bring the case to court). Litigants vary in the case they present to attorneys which is either an easy or difficult case $\mu \in \{E, D\}$. In the market, the distribution of easy and difficult cases is commonly known with probabilities α and $1 - \alpha$, respectively. Depending on the model, litigants can be informed on the merits of their case.

The market consists of two types of attorneys, 'strong' attorneys ($\phi = S$) and 'weak' attorneys ($\phi = W$). In the market, each attorney can only represent one litigant and contracts accordingly. Litigants know that fraction θ of the attorneys in the market are strong, whereas fraction $1 - \theta$ is weak. We assume that strong and weak attorneys differ in two dimensions. First, only strong attorneys learn whether a case of difficult or easy. Second, strong attorneys have a higher probability of winning difficult cases than weak attorneys. This does not hold for easy cases, implying that strong attorneys have both an absolute and a comparative advantage in difficult cases. Furthermore, we assume that the set of active attorneys is sufficiently large, yet strong attorneys are scarce (i.e., there is insufficient supply) and can only represent a fraction, $1 - \alpha$, of all cases. This assumption implies that there is a sufficient number of strong attorneys to represent the subset of clients with difficult cases but cannot represent the full set of clients in the economy.

The true probability of winning a case in court depends on the strength of the attorneys as well as the difficulty of the case, $p \equiv p(\phi, \mu)$. Easy cases are won with probability $\tau + \varepsilon \leq 1$, whereas difficult cases are won with probability τ. Strong attorneys are always able to materialize these probabilities in court, while weak attorneys only have a success rate of $\beta \in (0,1)$ for difficult cases. Table 1 summarizes the probabilities of winning a case in court.

The pay-off of players depends on the contract type, $\Omega \in \{\omega_\phi, \omega'_\phi\}$, that is agreed upon in equilibrium. Let ω_ϕ denote a fixed fee (FF) contract that is paid to attorneys of type ϕ independent of the outcome of the case in court and let ω'_ϕ denote a contingent fee (CF) contract that is only paid to attorneys of type ϕ if the lawsuit is won.

An attorney's objective is to maximize profit $\Pi^\mu_\phi(\Omega)$ by representing a client with case type μ and contract Ω. Attorneys incur costs K for representing clients in court and have an outside option of $\Pi^{out} = \overline{\pi}$ by accepting a wage as an employee at a law firm. Attorneys are assumed

Table 1 Probabilities of winning a case in court

	Weak attorney	*Strong attorney*
Easy lawsuit	$\tau + \varepsilon$	$\tau + \varepsilon$
Difficult lawsuit	$\beta\tau$	τ

to be risk neutral. Formally, when representing a client their profit maximizing function is given by:

$$\Pi_\phi^\mu(\Omega) = E[\Omega | \phi, \mu] - K. \tag{1}$$

We assume that attorneys' Individual Rationality constraint is always met, such that they weakly prefer participating in the mechanism rather than not participating.

Litigants have the objective to maximize their utility and choose to sue or to not sue. Suing allows them to potentially recover awarded compensatory damages in court of $X > 0$ but requires them to hire an attorney at contracting costs Ω. Not suing leads to receiving no compensatory damages, $X = 0$ (i.e., their outside option is nihil). We assume that litigants are risk neutral. Formally, when taking their case to court their utility function is given by:

$$U^\mu = E[X - \Omega | \phi, \mu]. \tag{2}$$

In the legal market, we can distinguish between different settings where clients are either informed or uninformed on the merits of their case or the perceived competence of their attorney. If clients have information on the ability of attorneys, litigants can offer different contracts to attorney types and match attorney competency with the difficulty of the case. If this information is not available, litigants should rely on signals from attorneys or screen attorneys. See Table 2 for the timing of the model and Table 1A in the Appendix for a summary of notation.

Table 2 Timing of the model

Date 0	Litigants get into a legal conflict that is either easy or difficult to resolve in court.
Date 1	Litigants present the case to a number of attorneys.
Date 2	Attorneys simultaneously offer contracts or reject the lawsuit.
Date 3	Litigants observe the offer and select the contracts.
Date 4	The attorneys incur costs K.
Date 5	The litigant wins X with probability $p(\phi, \mu)$ and loses with probability $1 - p(\phi, \mu)$ and incurs costs Ω.
Date 6	The attorney is compensated according to the contract.

B. *Constraints to contracting*

In this section, we formulate the conditions under which a contract is offered by the attorney and accepted by the litigant. To solve this problem, we must consider the participation constraint of the players. We find the participating constraint of litigants by rewriting Eq. (2) such that their utility function equals their outside option. Clients are willing to sue if the expected compensatory damages exceed the wage to be paid to their attorneys such that,

$$E[\hat{p}]X^{min} \geq \min \{E[\Omega]\} , \qquad (3)$$

where X^{min} denotes the minimum required compensatory damages for a transaction and where $\hat{p} \in p$ denotes the perceived probability of winning a case in court.

To find the participation constraint of attorneys, their contract for representing the litigant should be at least as attractive as their outside option $\overline{\pi}$. Consequently, it follows from Eq. (1) that attorneys are indifferent between accepting contracts from litigants and their outside option whenever,

$$E[\Omega] \geq (K + \overline{\pi}) , \qquad (4)$$

which expresses the minimum compensation required for attorneys to represent litigants. Let us first consider that attorneys and litigants stipulate an FF-contracts for representation. This implies that the minimum compensation is $\omega_{PC} \geq (K + \overline{\pi})$. Substituting ω_{PC} in Eq. (3) finds the required compensatory damages for FF-contracts to sue,

$$X_{FF}^{min} \equiv X_{FF}^{min}(\hat{p}_{litigant}) = \frac{(K + \overline{\pi})}{\hat{p}_{litigant}} \,, \tag{5}$$

where $\hat{p}_{litigant} \in p$ denotes litigants' perceived probability of winning their case in court. Since FF-contracts requires litigants to pay for attorney fees independent of the outcome of the case, the minimum compensatory damages has an inverse relationship with the perceived probability to win the lawsuit. This is intuitive, when the perceived probability of winning the case in court is low, litigants are only willing to sue if the compensatory damages is sufficiently large to cover the attorney fees.

Consider now the scenario that CF-contracts are stipulated for representation. CF-contracts shift the investment risk from litigants to attorneys which replaces $\hat{p}_{litigant}$ with $\hat{p}_{\phi}$, attorneys' perceived probability to win the lawsuit such that,

$$X_{CF}^{min} \equiv X_{CF}^{min}(\hat{p}_{\phi}) = \frac{(K + \overline{\pi})}{\hat{p}_{\phi}} \,. \tag{6}$$

For CF-contracts, the minimum compensatory damages therefore depend on attorneys' type. As we shall see in the sections on contracting equilibria, the perceived probability of winning a lawsuit for weak attorneys is at highest equal to that of strong attorneys, $\hat{p}_W \leq \hat{p}_S$, which implies that the minimum compensatory damages for weak attorneys exceeds that of strong attorneys. Hence, given that X is low but sufficiently large such that it meets $X_{CF}^{min}(p_S)$ but not $X_{CF}^{min}(\hat{p}_W)$, litigants always face strong attorneys. In any case, the minimum compensation for attorneys is where $E[\omega'_{PC}] \equiv \omega_{PC} \geq (K + \overline{\pi})$ by using Eq. (4).

More interesting is whenever $\hat{p}_{litigant}$ deviates from $\hat{p}_{\phi}$ (risk aversion). Whenever $\hat{p}_{litigant} < \hat{p}_{\phi}$, CF-contracts induce litigants to pursue cases that they were not willing to under FF-contracts given that X is low. This is intuitive, since litigants do not bear the investment risk under CF-contracts, the participation constraint of the attorney is binding. If $\hat{p}_{\phi}$ is closer to the true probability of winning a case, p, efficiency is improved because more profitable cases are taken to court than under FF-contracts. Now consider that $\hat{p}_{litigant} > \hat{p}_{\phi}$. In this case, CF-contracts can be an effective mechanism to ensure that attorneys only bring cases to court for which they think are profitable. That is, CF-contracts ensure that objectives between litigants and attorneys are aligned.

We can now formulate the conditions under which cases are brought to court. The constraints of contracting depend on X and the perceived probability of winning a lawsuit, $\hat{p}$. It follows from Eqs. (3)-(6) that transactions between attorneys and litigants occur whenever X is sufficiently large such that:

$$X > \min\{X_{FF}^{min}, X_{CF}^{min}\}. \tag{7}$$

For future reference, we assume that condition (7) is always satisfied. We thus only consider cases where the compensatory damages are sufficiently large such that all players are willing to bring the case to court.

IV. Contracting equilibria

A. Completely informed litigant

We begin our analysis with points of reference where litigants are completely informed. In other words, we assume that litigants possess credible information on the ability of attorneys and know the merits of their case. Litigants can use this information to efficiently interact with attorneys by contracting according to attorneys' type and the merits of their case. Consider first that only FF-contracts are offered in equilibrium. Clearly, litigants with easy lawsuits can recruit weak attorneys by simply agreeing on a wage that meets weak attorneys' participation constraint such that $\omega_w = K + \overline{\pi}$. There is no incentive to deviate from this wage because weak attorneys abound and strong attorneys cannot provide for more awarded damages in court since, $p(S, E) \equiv p(W, E) = \tau + \varepsilon$. This is different for litigants with difficult cases since they have an incentive to contract with strong attorneys that win difficult lawsuits with a higher probability, where $p(S, D) > p(W, D)$ such that $\Delta(U^D) = (1 - \beta)\tau X$. It follows that litigants with difficult cases are indifferent between either type if the agreed wage is $\omega_S = (1 - \beta)\tau X + (K + \overline{\pi})$.

Now consider that CF-contract can also be stipulated in equilibrium. It is intuitive that CF-contracts are equivalent to FF-contracts under complete information since the perceived probability of winning a case is equal to the true probability of winning a case, $\hat{p} = p$. In that sense, it does not matter whether the attorney is paid ex-ante contracting or ex-post contracting because the expected wage is equal for both parties. Thus, it follows that

$$\omega_w \equiv E[\omega_W'] = K + \overline{\pi}, \tag{8a}$$

$$\omega_S \equiv E[\omega_S'] \le (1 - \beta)\tau X + (K + \overline{\pi}), \tag{8b}$$

are stipulated in equilibrium. To be a viable equilibrium, the rationality condition of litigants with difficult cases requires that they should prefer contracting with strong attorneys over accepting CF-contracts from weak attorneys. It is namely the bite of the model that makes weak attorneys rather careful when offering CF-contracts to litigants since they do not observe the merits of a case. Hence, their CF-contract with $\omega_W' = \left[\frac{K + \overline{\pi}}{\tau + \varepsilon}\right]$ is only offered whenever it holds that,

$$U^D(\omega_W') < U^D(\omega_S) \equiv U^D(\omega_S'). \tag{9}$$

Appendix A1 proofs that Eq. (9) is satisfied in equilibrium.

From comparing Eq. (8a) and (8b), we can derive two implications. First, strong attorneys are paid more compared to weak attorneys because strong attorneys recruit litigants with relatively more difficult cases. Since strong attorneys add more value to difficult cases, litigants are willing to pay a premium for their representation in court. Second, both FF-contracts and CF-contracts are offered by either attorney type in equilibrium and the respective contracts are equivalent to each other in their expected form. This implies that both types of contracts are efficient when litigants are completely informed. Analogously, litigants with relatively simple cases should not hire strong attorneys because it adds no value.

Substituting Eq. (8a) and (8b) in Eq. (1) and (2) derives the following pay-offs in equilibrium,

$$U^E(\omega_W) \equiv U^E(\omega_W') = (\tau + \varepsilon)X - (K + \overline{\pi}), \tag{10a}$$

$$U^D(\omega_S) \equiv U^D(\omega_S') = \beta\tau X - (K + \overline{\pi}), \tag{10b}$$

$$\Pi_w^E(\omega_W) \equiv \Pi_w^E(\omega_W') \equiv \Pi^{out} = \overline{\pi}, \tag{10c}$$

$$\Pi_S^D(\omega_S) \equiv \Pi_S^D(\omega_S') = (1 - \beta)\tau X + \overline{\pi}. \tag{10d}$$

Proposition 1: *Under the assumption that litigants are completely informed on the merits of their case and the ability of attorneys, litigants with difficult cases recruit strong attorneys and*

litigants with easy cases recruit weak attorneys. In this equilibrium, strong attorneys demand relatively higher wages since they provide for more awarded damages in court for difficult lawsuits. Finally, since litigants are completely informed, FF-contracts are equivalent to CF-contracts in equilibrium.

B. *Informed litigant on case difficulty*

Let us now assume that litigants are only informed on the merits of their case. To find the equilibrium contracts, it is illuminating to evaluate the possible strategies of weak attorneys first and determine the best response of strong attorneys subsequently. Recall that weak attorneys abound, such that competition leads to competitive contracts where weak attorneys are indifferent between representing litigants with an 'average' case and their outside option. It is easy to verify that evaluating the participation constraint of weak attorneys under Eq. (2) leads to FF-contracts with $\omega_W = K + \overline{\pi}$ and CF-contracts with $\omega_W' = \left[\frac{K+\overline{\pi}}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]$. Weak attorneys are indifferent between these contracts, but the profit formula is rather contrasting. Under FF-contracts, weak attorneys make a profit equal to their outside option independent of the case they represent. By contrast, under CF-contracts weak attorneys make a relatively larger profit when representing litigants with easy cases and make a loss when facing difficult case litigants. Under uncertainty, the terms will cancel out such that their profit under CF-contracts is equivalent for weak attorneys, $\Pi_W^{E,D}(\omega_W) \equiv \Pi_W^{E,D}(\omega_W')$.

Depending on strong attorneys' strategy their type may be revealed. For instance, if strong attorneys offer contracts distinct to litigants' case, their type is revealed, and litigants chooses strategies accordingly. Comparable, if strong attorneys offer non-equivalent contracts to litigants, they infer attorneys' type and choose their best response. This may lead to possible separating equilibria where the market for attorneys is separated depending on litigants' type.

Suppose that a pooling equilibrium exists. In that sense, strong attorneys offer equivalent contracts to litigants with respect to weak attorneys. Possible pooling equilibria are where $\omega_S = \omega_W$ or $\omega_S' = \omega_W'$. To be a stable equilibrium, strong attorneys should not have a profitable deviation by offering different contract types to litigants. Therefore, it should hold that,

$$\Pi_S^{E,D}(\omega_S) > \Pi_S(\Omega) \quad \text{or} \quad \Pi_S^{E,D}(\omega_S') > \Pi_S(\Omega),$$

$$\text{where } \omega_S = \omega_W \text{ or } \omega_S' = \omega_W' \qquad (11)$$

If weak attorneys offer FF-contracts of $\omega_W = K + \overline{\pi}$, it is easy to verify that any $\omega_S > K + \overline{\pi}$ is rejected since $U^E(\omega_S) < U^E(\omega_W)$ and $U^D(\omega_S) < U^D(\omega_W)$, assuming that litigants are uninformed on the ability of attorneys. Besides, weak attorneys would be able to credibly mimic the strategy and competition will lead to competitive contracts again. Now consider a deviation strategy of strong attorneys by offering CF-contracts where $\omega_S{}' = \left[\frac{K+\overline{\pi}}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]$. Appendix A2 proofs that this strategy is in fact loss-making. The reasoning is intuitive. If easy case litigants observe $\omega_S{}'$, their best response is to accept FF-contracts from weak attorneys since $U^E(\omega_W) > U^E(\omega_S{}')$. This exposes strong attorneys to difficult case litigants where CF-contracts yield no positive profit, $\Pi_S^D(\omega_S{}') < 0$. Hence, there exists no profitable deviation for strong when $\omega_W = \omega_S$, which implies the existence of a pooling equilibrium. Note that there is no formal need to consider weak attorneys' deviation strategies because they are indifferent between FF-contracts and CF-contracts at a competitive price. For further reference, we refer to this equilibrium where $\omega_{pool} \equiv \omega_S = \omega_W = K + \overline{\pi}$. In this equilibrium, the pay-offs of the players are as follows,

$$U^E(\omega_{pool}) = (\tau + \varepsilon)X - K \,, \tag{12a}$$

$$U^D(\omega_{pool}) = [\theta + (1 - \theta)\beta]\tau X - K \,, \tag{12b}$$

$$\Pi_S^{E,D}(\omega_{pool}) \equiv \Pi_W^{E,D}(\omega_{pool}) = \overline{\pi} \,. \tag{12c}$$

Now suppose that weak attorneys offer CF-contracts where $\omega_W{}' = \left[\frac{K+\overline{\pi}}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]$. For the existence of a pooling equilibrium, Eq. (11) implies that strong attorneys have no incentive to deviate to a different contract. Like FF-contracts, any $\omega_S' > \omega_W{}' = \left[\frac{K+\overline{\pi}}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]$ is mimicable by weak attorneys and competition forces prices down to a competitive price level. Hence, this implies that such deviation is not profitable. If strong attorneys offer FF-contracts instead, $\omega_S = K + \overline{\pi}$ yield a profit equal to their outside option. This deviation decreases profits since CF-contracts yield profits where $\Pi_S^{E,D}(\omega_S{}') > \overline{\pi}$. Recall, that competitive CF-contracts are determined by weak attorneys' binding participation constraint under Eq. (4). For strong attorneys, these CF-contracts are less 'loss-making' if offered to difficult case clients because

they win difficult cases with a higher probability. Does this make a pooling equilibrium outcome? No, strong attorneys have an incentive to avoid difficult case litigants and contract with easy litigants instead since,

$$\Pi_S^E(\omega_S') > \Pi_S^{E,D}(\omega_S') > 0 > \Pi_S^D(\omega_S') \ . \tag{13}$$

It is trivial that Eq. (13) holds since $p(S,E) > p(S,D) \Rightarrow \Pi_S^E(\omega_S') > \Pi_S^{E,D}(\omega_S')$, see appendix A3 also. This implies that there exists no pooling equilibrium where strong attorneys offer the same CF-contract to either litigant type.

Next, consider candidate separating equilibria. Naturally, such equilibria require different strategies from attorneys such that litigants get informed on their type or the merits of their case. There are two types of candidate separating equilibria possible. First, where strong attorneys offer different contracts than weak attorneys do. Second, where strong attorneys offer contracts tailored to litigants' type. Hence, it should at least hold that strong attorneys have no profitable deviation such that,

$$\Pi_S^{E,D}(\omega_S') > \Pi_S(\Omega) \ \text{ or } \ \Pi_S^{E,D}(\omega_S) > \Pi_S(\Omega), \qquad \text{where } \omega_S' \neq \omega_W' \text{ and } \omega_S \neq \omega_W \tag{14a}$$

Or

$$\Pi_S^E(\omega_S') > \Pi_S^{E,D}(\Omega) \ \text{ or } \ \Pi_S^D(\omega_S') > \Pi_S^{E,D}. \tag{14b}$$

For Eq. (14a) to hold, suppose that weak attorneys offer competitive FF-contracts where $\omega_W = K + \overline{\pi}$. We already have seen in the derivation of the pooling equilibrium from above, that strong attorneys cannot offer CF-contracts with $\omega_S' = \left[\frac{K+\overline{\pi}}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]$ where $\Pi(\omega_S') > \overline{\pi}$ because $U^E(\omega_W) > U^E(\omega_S')$. Thus, strong attorneys would have an incentive to offer similar FF-contracts where $\omega_S = \omega_W = K + \overline{\pi}$ and Eq. (14a) fails to hold.

Now assume that weak attorneys remain to offer competitive FF-contract. Strong attorneys could offer CF-contracts to only easy case litigants where $\omega_S' = \frac{K+\overline{\pi}}{\tau+\varepsilon}$ and avoid contracting with difficult case litigants. Although this signal attorneys' type, litigants with easy cases are indifferent between accepting either contract since the expected wage is equivalent, $E[\omega_S'] \equiv \omega_W$, and strong attorneys will *not* provide for more compensatory damages in court since

$p(S,E) = p(W,E)$. Strong attorneys have no profitable deviation because any other (competitive) contract will yield the same profit that equals their outside option. Hence, Eq. (14b) is satisfied. Note that weak attorneys cannot mimic this strategy because it does not satisfy their participation constraint under Eq. (4) such that $\Pi_W^{E,D}(\omega_S') < 0$ (see Appendix A4). In this separating equilibrium, the pay-offs of the players are equivalent to Eq. (12a)-(12c),

$$U^E(\omega_S') \equiv U^E(\omega_W) = (\tau + \varepsilon)X - K \,, \tag{15a}$$

$$U^D(\omega_W) = [\theta + (1-\theta)\beta]\tau X - K \,, \tag{15b}$$

$$\Pi_S^{E,D}(\omega_S') \equiv \Pi_W^{E,D}(\omega_W) = \overline{\pi} \,. \tag{15c}$$

Finally, assume that weak attorneys offer competitive CF-contracts where $\omega_W' = \left[\frac{K+\overline{\pi}}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]$. Evidently, it is never a best response for strong attorneys to offer FF-contracts because this yields a profit equal to their outside option, see the derivations under the pooling equilibrium. The only possible strategy for strong attorneys is therefore to offer CF-contracts. Using Eq. (13) and (14b) it is clear that their best strategy is to mimic the CF-contract of weak attorneys and offer it only to easy case litigants. That is, strong attorneys avoid contracting with difficult case clients and adverse selection is a mere result. In this separating equilibrium, the pay-offs are as follows,

$$U^E(\omega_S') \equiv U^E(\omega_W') = (\tau + \varepsilon)X - \left[\frac{(\tau+\varepsilon)}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right](K+\overline{\pi}) \,, \tag{16a}$$

$$U^D(\omega_W') = \beta\tau X - \left[\frac{\beta\tau}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right](K+\overline{\pi}), \tag{16b}$$

$$\Pi_W^{E,D}(\omega_W') = \overline{\pi} \,, \tag{16c}$$

$$\Pi_S^E(\omega_S) = \left[\frac{(\tau+\varepsilon)}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]\overline{\pi} - \left[1 - \frac{(\tau+\varepsilon)}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]K \,. \tag{16d}$$

Proposition 2: *Under the assumption that litigants are uninformed on the ability of attorneys but possess information on the merits of their, at least three equilibria exist. First, a pooling equilibrium exists where both attorney types offer FF-contracts at a competitive price where $\omega_S = \omega_W \equiv \omega_{pool} = K + \bar{\pi}$. In such instance, both easy and difficult case litigants are represented by either strong or weak attorneys. Second, a separating equilibrium exists where strong attorneys only offer CF-contracts to easy case litigants and avoid contracting with difficult ones. Here, CF-contracts wages are equal to $\omega_S' = \omega_W' = \left[\frac{K+\bar{\pi}}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]$. Finally, a separating equilibrium exists where strong attorneys offer CF-contracts to easy case litigants and weak attorneys offer universal FF-contracts. In such instance, wages are equal to $\omega_S' = \frac{K+\bar{\pi}}{\tau+\varepsilon}$ and $\omega_W = K + \bar{\pi}$.*

We conclude this section with a note on these equilibria. We conjecture that under the proposed informational assumptions, adverse selection occurs, and difficult case litigants will never contract with strong attorneys if weak attorneys offer CF-contracts. Albeit that difficult case clients infer attorneys' type in these equilibria, they are simply not able to contract with strong attorneys due to adverse selection. Simply put, strong attorneys prefer contracting with easy case litigants, thereby mimicking the very same CF-contracts of weak attorneys. Since weak attorneys are uncertain on the merits of each specific case and calculate their optimal CF-contracts accordingly, such contracts yield positive economic rents for strong attorneys if it is offered to easy case litigants instead of difficult ones. Thus, rent is created not because strong attorneys have higher efficiency (i.e., wining cases with a higher probability) but because of their *cherry-picking* strategy.

C. Informed litigant on attorney strength

To complement the previous section, we now assume that litigants are only informed on the ability of attorneys. This assumption allows litigants to screen attorney types and make informed decisions accordingly. The results are of interests in themselves and helps us to understand whether strong attorneys have an incentive to reveal the merits of litigant' cases.

Consider first possible pooling equilibria where attorneys offer equivalent contracts. Similar to the previous section, weak attorneys need to commit to a competitive contract where $\omega_W = E[\omega_W'] = K + \bar{\pi}$. Whether strong attorneys have an incentive to deviate from these contracts depends on Eq. (11). It is easy to verify that strong attorneys can profitably deviate to a relatively more expensive contract since *uninformed* litigants on their case are strictly *not*

indifferent between attorney types if $\omega_S = \omega_W = K + \overline{\pi}$ since $U^{E,D}(\omega_S) > U^{E,D}(\omega_W)$. Note that the same holds for CF-contracts. Hence, litigants are willing to pay a premium to strong attorneys if,

$$\omega_S \equiv E[\omega_S'] \leq (1 - \alpha)(1 - \beta)\tau X + (K + \overline{\pi}). \tag{17}$$

This is rather intuitive. Recruiting strong attorneys leads to more ex-post awarded damages if their case turns out to be difficult. Yet, when their case turns out to be easy, litigants make an ex-post 'loss' since the alternative option of recruiting weak attorneys would have yield a higher utility. Hence, these terms cancel out such that, $\alpha U^E(\omega_S) + (1 - \alpha)U^D(\omega_S) \equiv U^{E,D}(\omega_W)$. Since strong attorneys have an incentive to offer non-equivalent contracts to litigants, Eq. (11) fails to hold and pooling equilibria do not exist.

To evaluate candidate separating equilibria, recall that the condition under Eq. (14a) or (14b) needs to be satisfied. Consider that Eq. (14a) holds such that strong attorneys offer equivalent contracts to both easy case litigants and difficult case litigants. For CF-contracts, this is never a dominant strategy because Eq. (13) implies that strong attorneys are reluctant to offer CF-contracts to difficult case clients since $p(S, E) > p(S, D)$. Strong attorneys have a profitable deviation by either avoiding difficult case clients or offer universal FF-contracts instead. Hence, a separating equilibrium where strong attorneys play a strategy with universal CF-contracts under Eq. (17) is not possible.

Now suppose that strong attorneys offer universal FF-contracts under Eq. (17). In that case, Eq. (14a) requires that there is no profitable deviation by offering CF-contracts to litigants. Clearly, if strong attorneys offer universal CF-contracts under Eq. (17) this leads to a decrease in profit since this contract is less profitable when representing difficult case litigants, see Eq. (13). By contrast, FF-contracts always yield equal profits, independent of the litigant that is represented because the client bears the risk of non-payment if the case is lost in court. Note that weak attorneys' strategy here is to no avail because litigants are indifferent for contracts under Eq. (17). They either offer FF-contracts or CF-contracts at a competitive price. If weak attorneys offer FF-contracts, players' pay-off yield,

$$U^E(\omega_S) = (\tau + \varepsilon)X - \left[\theta[(1 - \alpha)(1 - \beta)\tau X + \overline{\pi}] + (1 - \theta)[K + \overline{\pi}]\right] \tag{18a}$$

$$U^D(\omega_S) \equiv U^D(\omega_W) = \beta\tau X - (K + \overline{\pi}) \tag{18b}$$

$$\Pi_W^{E,D}(\omega_W{}') = \overline{\pi}, \tag{18c}$$

$$\Pi_S^{E,D}(\omega_S) = (1-\alpha)(1-\beta)\tau X + \overline{\pi}. \tag{18d}$$

If weak attorneys offer CF-contracts, players' pay-off yield,

$$U^E(\omega_S,\omega_W) = (\tau+\varepsilon)X - \big[\theta[(1-\alpha)(1-\beta)\tau X + \overline{\pi}] + (1-\theta)[K+\overline{\pi}]\big] \tag{19a}$$

$$U^D(\omega_S) \equiv U^D(\omega_W) = \beta\tau X - \left[1 - \frac{\beta\tau}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right](K+\overline{\pi}) \tag{19b}$$

$$\Pi_W^{E,D}(\omega_W{}') = \overline{\pi}, \tag{19c}$$

$$\Pi_S^{E,D}(\omega_S) = (1-\alpha)(1-\beta)\tau X + \overline{\pi}. \tag{19d}$$

Finally, suppose that strong attorneys only offer CF-contracts to easy case litigants and avoid contracting with difficult ones. In that sense, litigants are not only informed on the ability of attorney (by assumption) but also on the merits of their case due to signaling. The best response for easy case litigants is therefore to contracts with weak attorneys since, $p(S,E) = p(W,E) \Rightarrow U^E(\omega_W) > U^E(\omega_S{}')$. This leaves strong attorneys with difficult case clients such that Eq. (14b) fails to hold. Hence, this is does not constitute to a separating equilibrium.

Proposition 3: *Under the assumption that litigants are only informed on the ability of attorneys, strong attorneys have no incentive to reveal the merits of litigants' case. Two separating equilibria exist, whereby strong attorneys always offer FF-contracts. Under this FF-contracts, litigants are willing to pay a slight premium to recruit strong attorneys for the event that their case turns out to be difficult. Weak attorneys are indifferent between offering FF-contracts and CF-contracts at a competitive price and earn a profit equal to their outside option.*

D. Completely uninformed litigant

In the last variation of our model, we assume that litigants are completely uninformed. In the legal world, this ubiquitous and can best be characterized for situations where litigants have

no prior experience in litigation. For example, a fledgling business owner wants to sue his supplier for delivering products of poor quality (breach of contract). Or consider an employee that wants to sue his employer for wrongful discharge and seeks for an attorney. Or a patient that wants to sue medical specialists for medical malpractice. In each of these cases, litigants are not only uncertain which attorneys are of high ability, they are also unsure whether their case is even legally defensible.

We start the analysis by considering candidate pooling equilibria. Like previous sections, weak attorneys need to commit to competitive prices, and are indifferent between FF-contracts where $\omega_W = K + \overline{\pi}$ and CF-contract where $\omega'_W = \left[\frac{K+\overline{\pi}}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]$. Suppose that weak attorneys commit to FF-contracts. For a pooling equilibrium to exists, strong attorneys must not be able to profitable deviate from contracts where $\omega_S = \omega_W = K + \overline{\pi}$ such that Eq. (11) remains to hold. It is intuitive that any FF-contract where $\omega_S > \omega_W$ is not profitable because litigants are able to recruit attorneys at the competitive market price where $\omega_S = K + \overline{\pi}$. Thus, to break the pooling equilibrium there should exists a CF-contract such that $\Pi_S^{E,D}(\omega'_S) > \Pi_S^{E,D}(\omega_S)$. Recall that under Section IV.B., strong attorneys had no profitable deviation because litigants had information on the merits of their case. When litigants are completely uninformed, CF-contracts at a competitive price are always more attractive since $\hat{p}_{litigant} < p_W \Rightarrow U^{E,D}(\omega'_S) > U^{E,D}(\omega_W)$ if $\omega'_S = \left[\frac{K+\overline{\pi}}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]$ (see Appendix A5). Strong attorneys always earn a profit that exceeds their outside option because they win difficult case with a higher probability, hence $\Pi_S^{E,D}(\omega'_S) > \Pi_S^{E,D}(\omega_S)$ such that the pooling equilibrium requirements under Eq. (11) fail to hold for FF-contracts.

It easy to verify that these requirements under Eq. (11) also fail when both attorney types offer CF-contracts where $\omega'_S = \omega'_W = \left[\frac{K+\overline{\pi}}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]$. Recall from Section IV.B. that strong attorneys always have a profitable deviation by contracting with easy case litigants and avoid difficult ones, $\Pi_S^E(\omega'_S) > \Pi_S^{E,D}(\omega'_S)$. This implies that at least for facing difficult case litigants, strong attorneys have a different strategy than weak attorneys,

Next, consider possible separating equilibria. Suppose first that strong attorneys offer CF-contracts and that weak attorneys offer FF-contracts. It follows that weak attorneys are required to commit to an FF-contracts where $\omega_W = K + \overline{\pi}$. For a separating equilibrium to exist, strong attorneys need to offer CF-contracts that cannot be profitable mimicked by weak attorneys, see Eq. (14). Any CF-contract where,

$$\left[\frac{K + \overline{\pi}}{\alpha(\tau + \varepsilon) + (1 - \alpha)\tau}\right] \leq \omega_S' < \left[\frac{K + \overline{\pi}}{\alpha(\tau + \varepsilon) + (1 - \alpha)\beta\tau}\right], \quad (20)$$

is profitable for strong attorneys and not profitably mimicable for weak attorneys. Yet, strong attorneys remain to have an incentive to only offer the CF-contract under Eq. (18) to easy case litigants and avoid difficult ones. To illustrate, suppose that strong attorneys offer $\omega_S' = \left[\frac{K + \overline{\pi}}{\alpha(\tau + \varepsilon) + (1 - \alpha)\beta\tau}\right]$ to only easy case litigants. Since weak attorneys can copy this contract in equilibrium, easy case litigants cannot infer whether their attorney is of type strong or weak. By contrast, difficult case litigants will get informed because they infer that strong attorneys will never contract with them for wage where $\omega_S' = \left[\frac{K + \overline{\pi}}{\alpha(\tau + \varepsilon) + (1 - \alpha)\beta\tau}\right]$. In this separating equilibrium, the pay-offs are as follows:

$$U^E(\omega_S, \omega_W) = (\tau + \varepsilon)X - \left[\theta\left[\frac{(\tau + \varepsilon)(K + \overline{\pi})}{\alpha(\tau + \varepsilon) + (1 - \alpha)\beta\tau}\right] + (1 - \theta)[K + \overline{\pi}]\right], \quad (21a)$$

$$U^D(\omega_S) \equiv U^D(\omega_W) = \beta\tau X - (K + \overline{\pi}), \quad (21b)$$

$$\Pi_W^{E,D}(\omega_W') = \overline{\pi}, \quad (21c)$$

$$\Pi_S^E(\omega_S') = \left[\frac{(\tau + \varepsilon)}{\alpha(\tau + \varepsilon) + (1 - \alpha)\beta\tau}\right]\overline{\pi} - \left[1 - \frac{(\tau + \varepsilon)}{\alpha(\tau + \varepsilon) + (1 - \alpha)\beta\tau}\right]K. \quad (21d)$$

Now assume that weak attorneys also offer CF-contracts where $\omega_W' = \left[\frac{K + \overline{\pi}}{\alpha(\tau + \varepsilon) + (1 - \alpha)\beta\tau}\right]$. A separating equilibrium exists if strong attorneys have no profitable deviation from their strategy under Eq. (21d). Clearly, if strong attorneys offer the very same contract to difficult case clients, their profit decreases because $p(S, D) < p(S, E)$. Also, any FF-contract at a competitive prices leads to a profit that equals their outside option, hence $\Pi_S^{E,D}(\omega_S) < \Pi_S^E(\omega_S')$. It follows that there exists a second separating equilibrium because of weak attorneys' indifference between the competitive FF-contracts and CF-contracts. The pay-offs are similar to Eqs. (21a)-(21d). Only now difficult case clients are slightly better-off and easy case clients are strictly worse off for paying more their attorney, $E[\omega_S'] > \omega_W$. In this separating equilibrium, the pay-offs are,

$$U^E(\omega_S, \omega_W) = (\tau + \varepsilon)X - \left[\frac{(\tau + \varepsilon)(K + \overline{\pi})}{\alpha(\tau + \varepsilon) + (1 - \alpha)\beta\tau}\right], \tag{22a}$$

$$U^D(\omega_S) \equiv U^D(\omega_W) = \beta\tau X - \left[\frac{(\tau + \varepsilon)(K + \overline{\pi})}{\alpha(\tau + \varepsilon) + (1 - \alpha)\beta\tau}\right], \tag{22b}$$

$$\Pi_W^{E,D}(\omega_W') = \overline{\pi}, \tag{22c}$$

$$\Pi_S^E(\omega_S') = \left[\frac{(\tau + \varepsilon)}{\alpha(\tau + \varepsilon) + (1 - \alpha)\beta\tau}\right]\overline{\pi} - \left[1 - \frac{(\tau + \varepsilon)}{\alpha(\tau + \varepsilon) + (1 - \alpha)\beta\tau}\right]K. \tag{22d}$$

Proposition 4: *Under the assumption that litigants are completely uninformed, strong attorneys have an incentive to offer CF-contracts to easy case clients and avoid contracting with difficult ones. This strategy profile of strong attorneys informs difficult case on the merits of their case and their attorney type in equilibrium. Yet, this also implies that adverse selection occurs and that difficult case clients cannot contract with strong attorneys. Since weak attorneys offer either competitive FF-contracts or the very same CF-contract, two separating equilibria exists.*

We conclude this section with a note on these equilibria. The strategy profile of strong attorneys is comparable to Section IV.B. Under Section IV.B. where litigants were informed on the merits of their case, strong attorneys had no possibility to offer CF-contracts to litigants if weak attorneys offered competitive FF-contracts. Since litigants had information on their case, competitive CF-contracts where the price reflects an 'average' case is more expensive than competitive FF-contracts. This does not hold when litigants are completely uniformed. Any CF-contract at a competitive price is in that case more attractive than competitive FF-contracts.

V. Welfare

In this section we compare the results of each case and consider the efficiency of CF-contracts. We define social welfare, Ψ, as the fraction of difficult cases that is represented by strong attorneys. Thereby, we assume that if strong attorneys are indifferent between

Table 4 Welfare and rents under contingent-fee contracts

Information	Strategies	Ψ	R_S	R_W
Completely informed	$S = (\omega_S, \omega_W)$	1	$(1-\beta)\tau X$	0
	$S = (\omega_S{}', \omega_W)$	1	$(1-\beta)\tau X$	0
	$S = (\omega_S{}', \omega_W{}')$	1	$(1-\beta)\tau X$	0
Merits of case	$S = (\omega_S, \omega_W)$	θ	0	0
	$S = (\omega_S{}', \omega_W)$	0	0	0
	$S = (\omega_S{}', \omega_W{}')$	0	$\left[\dfrac{(\tau+\varepsilon)}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau} - 1\right](K+\overline{\pi})$	0
Attorneys' ability	$S = (\omega_S, \omega_W)$	θ	$(1-\alpha)(1-\beta)\tau X$	0
	$S = (\omega_S, \omega_W{}')$	θ	$(1-\alpha)(1-\beta)\tau X$	0
Completely uninformed	$S = (\omega_S{}', \omega_W)$	0	$\left[\dfrac{(\tau+\varepsilon)}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau} - 1\right](K+\overline{\pi})$	0
	$S = (\omega_S{}', \omega_W{}')$	0	$\left[\dfrac{(\tau+\varepsilon)}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau} - 1\right](K+\overline{\pi})$	0

representing each litigant in the given equilibrium, difficult case clients are represented by strong attorneys with the ex-ante probability of facing them.

Table 4 presents the welfare and rents under different informational assumptions and equilibrium strategies. In each case, weak attorneys set (expected) contract prices at a competitive level such that their rent always equals zero. This is different for strong attorneys. When litigants are completely informed, difficult case clients recruit strong attorneys at a higher wage because they infer that recruiting them leads to more awarded compensatory damages in court. Hence, the rent for strong attorneys equals the excess in awarded compensatory damages for their comparative advantage in pursuing difficult cases.

This result is similar when litigants are only informed on attorneys' ability. In this case, litigants are willing to pay a slight premium to strong attorneys for the possibility that their case turns out to be difficult. Consequently, if the ex-ante probability of an easy case is low, strong attorneys' rent will also be low(er). In these equilibria, difficult case clients are represented with probability θ since strong attorneys are indifferent between clients due to their FF-contract strategy. Hence, welfare is less than when litigants are completely informed.

When litigants are (at least) uninformed on ability of their attorney, strong attorneys play a '*cherry-picking*' strategy if they offer CF-contracts in equilibrium. Since strong attorneys can

distinguish between litigants' type, CF-contracts are more profitable if it is only offered to easy case litigants. This is detrimental to the economy because it implies that litigants with difficult cases cannot recruit strong attorneys. Hence, CF-contracts lead to adverse selection and welfare is reduced. The rent-seeking behavior of strong attorneys earns them a slight rent and makes easy cases clients particularly worse off if they, by chance, recruit strong attorneys.

Proposition 5: *CF-contracts lead to adverse selection if litigants are at least uninformed on the ability of their attorney. Namely, CF-contracts induce strong attorneys to recruit easy case clients over contracting with difficult ones.*

From this welfare analysis, we might explain three empirical phenomena related to the real world. First, US personal injury attorneys use billboard advertisements to earn rents. When passers-by of advertisements get involved in a legal conflict and recruit the advertising attorney, we conjecture that those litigants are willing to pay a premium for their legal services. This is because litigants are likely to perceive the advertisement as a signal for being strong, hence favoring them over 'cheaper' attorneys that do not stand out in the market. Similarly, this might explain way US legal firms often advertise and publish their past successes in litigation. For example, legal firms may point out that their past results involved high awarded compensatory to lure litigants and ask a premium. Second, we conjecture that Big Four (tax) attorneys earn more profit than their non-Big Four competitors because litigants are willing to pay more for their reputation or prestige. Table 4 shows that litigants are willing to pay more for 'strong' attorneys even if they are uninformed on the merits of their case. When the compensatory damages (X) are large, the relative profit between attorney types can be excessive. Finally, our welfare analysis indicates that litigants with difficult cases have a hard time recruiting strong attorneys using CF-contracts. Strong attorneys will likely infer that their case is relatively difficult, advise litigants to drop the case, and continue by recruiting litigants that yield more profitable cases. Hence, litigants have no other option then to recruit weak attorneys or drop the case if the expected profits under weak attorneys is too little to sue.

Are CF-contracts an enlargement to judicial systems? Two important aspects of the fee arrangement should be considered: adverse selection and moral hazard. First, our model predicts that permitting fee arrangements where attorneys are paid on a contingent-fee basis results in mere adverse selection. Such effect is detrimental to social welfare because difficult case litigants are forced to contract with weaker attorneys due to the market mechanism. If only FF-contracts are permitted, strong attorneys would be indifferent between recruiting litigants

since their profit does not depend on winning the case. Second, the actual benefit of CF-contracts lies in limiting moral hazard in the attorney-client relationship. Well documented in the literature is that attorneys exceed more effort under CF-contract compared to fixed fee pay. It is therefore highly likely that recruiting attorneys using CF-contracts increases the chances of winning a case in court if attorneys' effort is indeed related to the probability of wining lawsuits. Besides, CF-contracts induce attorneys to pursue cases that they perceive as feasible rather than frivolous because they bear the risk. This makes CF-contracts efficient and a strictly better way of contracting than traditional FF-contracts or hourly contracts.

VI. Final remarks

The main contribution of this paper has been to provide a better understanding of contingent-fee (CF) contracts in the market for attorneys that differ in their ability. After observing that the use of CF-contracts by litigation attorneys in the United States is omnipresent, it has been argued in the literature that CF-contracts are more effective than fixed-fee contracts (FF) in aligning the interests of contracting parties. We argue that this view is rather incomplete if hidden characteristics of attorneys are considered. In sum, our formal analysis suggests that CF-contracts are sensitive to adverse selection where high ability attorneys are frequently induced to a 'cherry-picking' strategy by contracting with litigants that possess easy cases over contracting with difficult ones.

We have pointed out that adverse selection does not occur if litigants are completely informed on the merits of their case and know the ability of their attorney before contracting starts. In reality, this assumption is highly unlikely because the legal profession is a specialized field that requires case experience and legal knowledge. Under other information assumptions, strong attorneys either prefer contracting with easy case litigants and avoid difficult ones using contingent-fee contracts or offer universal fixed-fee contracts to litigants.

Our findings are similar to Schneyder (1998) that argues that the premium collected under CF-contract compensates the lawsuits that are lost. Our model predicts that both weak attorneys and strong attorneys earn a considerable profit for representing easy case clients compared to a relative loss when facing litigants with difficult cases. If attorneys diversify and recruit either litigant with a consist probabilities, they still earn a predictable income stream. Furthermore, consistent with findings of Dana and Spier (1993) and Maurer et al. (1999), we argue that CF-contracts defer frivolous cases. When considering attorneys' time and effort required to represent litigants, it is unlikely that cases with little to no merits are pursued simply because the expected benefits do not exceed the costs.

In policymakers' decision to permit CF-contracts within the judicial system, the detrimental effect that CF-contracts may lead to adverse selection should be reckoned. Specifically, this effect should be evaluated with the benefits that CF-contracts provide, like limiting moral hazard problems in the attorney-client relationship and providing better access to the judicial system. Herein, it should be emphasized that countries where fee-shifting rules apply, better access to the judicial system is not a feasible argument because the losing party is required to pay for legal fees of the prevailing party.

Finally, our simple model lends itself to further extensions which suggests that future research on CF-contracts in the market for attorneys is fruitful. For example, unexplored is whether adverse selection occurs if the type of attorneys and the difficulty of cases are continuous rather than binary. Similarly, extensions to the model can be made by varying the costs levels of attorney types or assuming that litigants are risk-averse instead of risk-neutral.

Appendix

Table A1. List of Notation

Symbol	Meaning
X	Expected compensatory damages when suing a third party in court
$\mu \in \{E, D\}$	Easy ('E') case and difficult ('D') case
$\phi \in \{S, W\}$	Strong ('S') attorney and weak ('W') attorney
α	Ex-ante probability of having an easy case
θ	Ex-ante probability of having a strong attorney
$p(\phi, \mu)$	True probability of winning a case in court for attorney type ϕ and case type μ
$\hat{p}_{Litigant}, \hat{p}_\phi$	Perceived probability of winning a case in court for litigants or attorney type ϕ
β	Weak attorneys' handicap in win-rate when pursuing difficult cases
$\Omega \in \{\omega_\phi, \omega_\phi{}'\}$	Attorneys' set of contracts
$\omega_\phi, \omega_{pool}$	FF-contract and FF-contract under pooling equilibrium offered by attorney type ϕ
$\omega_\phi{}'$	CF-contract offered by attorney type ϕ
Π_ϕ^μ	Profit passed up in contracting equilibrium for case μ and attorney type ϕ
U^μ	Utility passed up in contracting equilibrium for litigants with case μ

A1. *Derivation of $U^D(\omega_W') < U^D(\omega_S) \equiv U^D(\omega_S')$*

Recall in this case that $\omega_W' = \frac{(K+\overline{\pi})}{(\tau+\varepsilon)}$, $\omega_S = (1-\beta)(\tau+\varepsilon)X + (K+\overline{\pi})$, and $\omega_S' = (1-\beta)X +$

$\frac{(K+\overline{\pi})}{(\tau+\varepsilon)}$. Substituting these under Eq. (9) gives,

$$\beta(\tau)X - \left[\frac{(K+\overline{\pi})}{(\tau+\varepsilon)}\right]\beta(\tau) > (\tau)X - [(1-\beta)(\tau+\varepsilon)X + (K+\overline{\pi})]$$

$$\Leftrightarrow$$

$$[(1-\beta)\tau - (1-\beta)(\tau+\varepsilon)]X < \left[1 - \frac{\beta(\tau)}{(\tau+\varepsilon)}\right](K+\overline{\pi})$$

$$\Leftrightarrow$$

$$[-\varepsilon](1-\beta)X < \left[1 - \frac{\beta(\tau)}{(\tau+\varepsilon)}\right](K+\overline{\pi})$$

$$\Leftrightarrow$$

$$X < \left[\frac{1}{-\varepsilon(1-\beta)} - \frac{\beta(\tau)}{-\varepsilon(\tau+\varepsilon)(1-\beta)}\right](K+\overline{\pi})$$

It is easy to verify that this equation does not hold because $-\varepsilon < 0$, which requires that $X < 0$, hence cannot hold by definition. This implies that there is no incentive for clients with a difficult case to contract with weak attorneys for wage $\omega_W' = \frac{(K+\overline{\pi})}{(\tau+\varepsilon)}$.

A2. *Derivation of $\Pi_S^{E,D}(\omega_S') < 0$*

Recall that $\omega_S' = \left[\frac{K+\overline{\pi}}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]$. In equilibrium, easy case litigants infer that $U^E(\omega_S') < U^E(\omega_W)$ since $E[\omega_S'] > K + \overline{\pi}$. Using Eq. (5), any $\omega_S' > \frac{K+\overline{\pi}}{(\tau+\varepsilon)}$ is less attractive for easy case clients. This implies that strong attorneys will have negative returns since only difficult case clients accept the (universal) offer:

$$\Pi_S^{E,D}(\omega_S') = \Pi_S^E(\omega_S') + \Pi_S^D(\omega_S')$$

$$\Leftrightarrow$$

$$E[\Pi_S^{E,D}(\omega_S')] = \Pi_S^E(\omega_S') * 0 + \Pi_S^D(\omega_S') * 1$$

$$\Leftrightarrow$$

$$E[\Pi_S^{E,D}(\omega_S')] = \Pi_S^D(\omega_S')$$

$$\Leftrightarrow$$

$$\Pi_S^D(\omega_S') < 0, \text{ since } \hat{p}_W > \hat{p}_S = p \Leftrightarrow \alpha(\tau+\varepsilon) + (1-\alpha)\beta\tau > \tau$$

A3. *Derivation of $\Pi_S^E(\omega_S') > \Pi_S^{E,D}(\omega_S) > \Pi_S^D(\omega_S')$*

$$E[\Pi_S^E(\omega_S')] > E[\Pi_S^D(\omega_S')]$$

$$\Leftrightarrow$$

$$\frac{[(1-\alpha)(1-\beta)\tau X + (K+\overline{\pi})]}{[\alpha(\tau+\varepsilon)+(1-\alpha)\tau]} * p_S^E > \frac{[(1-\alpha)(1-\beta)\tau X + (K+\overline{\pi})]}{[\alpha(\tau+\varepsilon)+(1-\alpha)\tau]} * p_S^D$$

$$\Leftrightarrow$$

$$p_S^E > p_S^D$$

$$\Leftrightarrow$$

$$(\tau + \varepsilon) > \tau$$

Which holds by definition since $\varepsilon > 0$.

And,

$$E[\Pi_S^E(\omega_S')] > \Pi_S^{E,D}(\omega_S)$$

Note $\Pi_S^E(\omega_S) \equiv \Pi_S^D(\omega_S) \Rightarrow \Pi_S^{E,D}(\omega_S)$ since this is an FF-contract. Hence, it follows that,

$$\frac{[(1-\alpha)(1-\beta)\tau X + (K + \overline{\pi})]}{[\alpha(\tau + \varepsilon) + (1-\alpha)\tau]} * p_S^E > (1-\alpha)(1-\beta)\tau X + (K + \overline{\pi})$$

$$\Leftrightarrow$$

$$\frac{p_S^E}{[\alpha(\tau + \varepsilon) + (1-\alpha)\tau]} > 1$$

$$\Leftrightarrow$$

$$p_S^E > \alpha(\tau + \varepsilon) + (1-\alpha)\tau$$

$$\Leftrightarrow$$

$$(\tau + \varepsilon) > \tau + \alpha\varepsilon.$$

Which holds by definition. Thus, strong attorneys always have an incentive to accept CF-contracts from litigants with easy lawsuits.

And,

$$E[\Pi_S^D(\omega_S')] < \Pi_S^{E,D}(\omega_S)$$

Which is the same as above, only now $p_S^E = p_S^D$,

$$\Leftrightarrow$$

$$\tau < \tau + \alpha\varepsilon.$$

Which holds by definition.

A4. *Derivation of* $\Pi_W^{E,D}(\omega_S{}') < 0$

Recall that $\omega_S' = \frac{(K+\overline{\pi})}{(\tau+\varepsilon)}$. If weak attorneys try to mimic this strategy, substituting under Eq. (4) leads to

$$[\pi^D(\omega_W')] = E[\pi^D(\omega_W'|\ \mu = E] + E[\pi^D(\omega_W')|\ \mu = D] - (K+\overline{\pi})$$

Where,

$$E[\pi^E(\omega_W')] = 0$$

And,

$$E[\pi^D(\omega_W')] < 0$$

$$\Leftrightarrow$$

$$E[\pi^D(\omega_W')] = E[\pi^D(\omega_W'|\ \mu = E] + E[\pi^D(\omega_W')|\ \mu = D] - (K+\overline{\pi})$$

$$\Leftrightarrow$$

$$E[\pi^D(\omega_W')] = 0 + \left[\frac{(K+\overline{\pi})}{(\tau+\varepsilon)}\right](\beta\tau) - (K+\overline{\pi})$$

$$\Leftrightarrow$$

$$\left[\frac{(\beta\tau)}{(\tau+\varepsilon)}\right](K+\overline{\pi}) < (K+\overline{\pi})$$

$$\Leftrightarrow$$

$$\left[\frac{(\beta\tau)}{(\tau+\varepsilon)}\right] < 1$$

Hence, this is not a profitable strategy for weak attorneys.

A5. *Derivation of* $\hat{p}_{litigant} < p_W \Rightarrow U^{E,D}(\omega_S') > U^{E,D}(\omega_W)$ *if* $\omega_S' = \left[\frac{K+\overline{\pi}}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]$

In the equilibrium, $\omega_S' = \left[\frac{K+\overline{\pi}}{\alpha(\tau+\varepsilon)+(1-\alpha)\beta\tau}\right]$ is offered by strong attorneys compared to $\omega_W = K + \overline{\pi}$ by weak attorneys. It follows that $E[\omega_S'] < \omega_W \Rightarrow U^{E,D}(\omega_S') > U^{E,D}(\omega_W)$ holds if $\hat{p}_{litigant} < p_W$. $\hat{p}_{litigant}$ can be calculated as:

$$\Pr(Win) = \Pr(Win \mid \mu = E) + \Pr(Win \mid \mu = D) =$$

$$\Pr(Win \mid \mu = E, \ \phi = S) + \Pr(Win \mid \mu = E, \ \phi = W) + \Pr(Win \mid \mu = D, \ \phi = S) +$$

$$\Pr(Win \mid \mu = D, \ \phi = W)$$

$$=$$

$$\alpha\theta(\varepsilon + \tau) + \alpha(1 - \theta)\beta(\varepsilon + \tau) + (1-)\alpha\theta(\tau) + (1 - \alpha)(1 - \theta)\beta(\tau)$$

$$=$$

$$\alpha\theta(\varepsilon + \tau) + \alpha(1 - \theta)\beta(\varepsilon + \tau) + (1 -)\alpha\theta(\tau) + (1 - \alpha)(1 - \theta)\beta(\tau)$$

$$=$$

$$\alpha[\theta + (1 - \theta)\beta](\varepsilon + \tau) + (1 - \alpha)[\theta + (1 - \theta)\beta]\tau$$

$$=$$

$$(\alpha\varepsilon + \tau)[\theta + (1 - \theta)\beta]$$

Clearly, $(\alpha\varepsilon + \tau)[\theta + (1 - \theta)\beta] < \alpha(\tau + \varepsilon) + (1 - \alpha)\beta\tau$ since $\theta < 1$.

Erasmus University Rotterdam, Erasmus School of Economics
Submitted: 1ˢᵗ of May 2023

References

Akerlof, G. A. (1970). The Market for "Lemons": Quality Uncertainty and the Market Mechanism. *Quarterly Journal of Economics*, *84*(3), 488.

Anagol, S., Cole, S., & Sarkar, S. (2017). Understanding the Advice of Commissions-Motivated Agents: Evidence from the Indian Life Insurance Market. *The Review of Economics and Statistics*, *99*(1), 1–15.

Babcock, L., & Loewenstein, G. (1997). Explaining Bargaining Impasse: The Role of Self-Serving Biases. *Journal of Economic Perspectives*, *11*(1), 109–126.

Baird, Z. (1994). Client's Experience with Implementing Value Billing. *Judicature*, *77*, 198.

Balafoutas, L., Beck, A., Kerschbamer, R., & Sutter, M. (2013). What Drives Taxi Drivers? A Field Experiment on Fraud in a Market for Credence Goods. *The Review of Economic Studies*, *80*(3), 876–891.

Balafoutas, L., Kerschbamer, R., & Sutter, M. (2017). Second-Degree Moral Hazard in a Real-World Credence Goods Market. *The Economic Journal*, *127*(599), 1–18.

Bovbjerg, R. R., Sloan, F. A., Dor, A., & Hsieh, C. (1991). Juries and Justice: Are Malpractice and Other Personal Injuries Created Equal? *Law And Contemporary Problems*, *54*(1), 5.

Brickman, L. (1989). Contingent Fees without Contingencies: Hamlet without the Prince of Demark. *Ucla L. Rev*, *37*, 29.

Brickman, L., Horowitz, M. J., & O'Connell, J. (1994). *Rethinking Contingency Fees: A Proposal to Align the Contingency Fee System with Its Policy Roots and Ethical Mandates*.

Casagrande, A., & Spallone, M. (2007). Investigating the determinants of pretrial settlement rates: contingent versus non-contingent lawyers' fees. *European Journal of Law and Economics*, *24*(1), 1–13.

Coffin, F. M. (1994). *On appeal: Courts, Lawyering, and Judging*. W.W. Norton.

Cohen, J. H. C. (1916). *The Law: Business or Profession?* Banks Law Publishing Company.

Dana, J. D., & Speir, K. E. (1993). Expertise and Contingent Fees: The Role of Asymmetric Information in Attorney Compensation. *The Journal of Law, Economics, & Organization*.

Danzon, P. M. (1983). Contingent Fees for Personal Injury Litigation. *The Bell Journal of Economics*, *14*(1), 213.

Darby, M. R., & Karni, E. (1973). Free Competition and the Optimal Amount of Fraud. *The Journal of Law and Economics*, *16*(1), 67–88.

Dulleck, U., & Kerschbamer, R. (2006). On Doctors, Mechanics, and Computer Specialists: The Economics of Credence Goods. *Journal of Economic Literature*, *44*(1), 5–42.

Emons, W. (2000). Expertise, contingent fees, and insufficient attorney effort. *International Review of Law and Economics*, *20*(1), 21–33.

Emons, W., & Garoupa, N. (2006). US-style contingent fees and UK-style conditional fees: agency problems and the supply of legal services. *Managerial and Decision Economics*.

Epstein, L., & Kobylka, J. F. (1993). The Supreme Court and legal change: abortion and the death penalty. *Choice Reviews Online*, *30*(07), 30–4079.

Fees and Expenses. (2022). American Bar Association. Retrieved January 7, 2023, from https://www.americanbar.org/groups/legal_services/milvets/aba_home_front/information_center/working_with_lawyer/fees_and_expenses/#:~:text=In%20a%20contingent%20fee%20arrangement,the%20money%20awarded%20to%20you.

Fee-Shifting. (2022). American Bar Association. Retrieved February 2, 2023, from https://www.americanbar.org/groups/delivery_legal_services/reinventing_the_practice_of_law/topics/fee_shifting/

Fox, C. R., & Birke, R. (2002). Forecasting trial outcomes: Lawyers assign higher probability to possibilities that are described in greater detail. *Law And Human Behavior*, *26*(2), 159–173.

Garoupa, N., & Gomez-Pomar, F. (2007). Cashing by the Hour: Why Large Law Firms Prefer Hourly Fees over Contingent Fees. *The Journal of Law, Economics, & Organization*, *24*(2), 458–475.

Gill, B., & Mealy, G. H. (1973). Contingent Fees in California After Fracasse v. Brent. *Golden Gate University Law Review*, *3*(2), 2.

Goodman-Delahunty, J., Granhag, P. A., Hartwig, M., & Loftus, E. F. (2010). Insightful or wishful: Lawyers' ability to predict case outcomes. *Psychology, Public Policy and Law*, *16*(2), 133–157.

Gottschalk, F. C., Mimra, W., & Waibel, C. (2020). Health Services as Credence Goods: a Field Experiment. *The Economic Journal*, *130*(629), 1346–1383.

Graves-Poller, B. (2016). Is Pro Bono Practice In Legal "Backwaters" Beyond The Scope of The Model Rules? *University of New Hampshire Law Review*, *13*(2), 3.

Haire, S. B., Lindquist, S. A., & Hartley, R. (1999). Attorney Expertise, Litigant Success, and Judicial Decisionmaking in the U.S. Courts of Appeals. *Law & Society Review*, *33*(3), 667.

Hay, B. A. (1996). Contingent Fees and Agency Costs. *The Journal of Legal Studies*, *25*(2), 503–533.

Hay, B. A. (1997). Optimal Contingent Fees in a World of Settlement. *The Journal of Legal Studies*, *26*(1), 259–278.

Heinz, J. P., & Laumann, E. O. (1985). Chicago Lawyers: The Social Structure of the Bar. *Social Forces*, *64*(1), 233.

Inderst, R., & Ottaviani, M. (2009). Misselling through Agents. *The American Economic Review*, *99*(3), 883–908.

Inderst, R., & Ottaviani, M. (2012). Competition through Commissions and Kickbacks. *The American Economic Review*, *102*(2), 780–809.

Kerschbamer, R., Neururer, D., & Sutter, M. (2016). Insurance coverage of customers induces dishonesty of sellers in markets for credence goods. *Proceedings of the National Academy of Sciences of the United States of America*, *113*(27), 7454–7458.

Kerschbamer, R., Neururer, D., & Sutter, M. (2019). Credence Goods Markets and the Informational Value of New Media: A Natural Field Experiment. *Social Science Research Network*.

Knight, J., & Epstein, L. (1996). On the Struggle for Judicial Supremacy. *Law & Society Review*, *30*(1), 87.

Kritzer, H. M. (1975). The justice broker: lawyers and ordinary litigation. *Choice Reviews Online*, *29*(1), 29–85.

Kritzer, H. M. (1978). The craft of justice: Politics and work in criminal court communities. *Journal of Criminal Justice*, *21*(6), 607–609.

Kritzer, H. M. (1984). Fee Arrangements and Fee Shifting: Lessons from the Experience in Ontario. *Law And Contemporary Problems*.

Kritzer, H. M. (1998). Contingent-Fee Lawyers and Their Clients: Settlement Expectations, Settlement Realities, and Issues of Control in the Lawyer-Client Relationship. *Law And Social Inquiry-journal of the American Bar Foundation*, *23*(04), 795–821.

Kritzer, H. M. (2002). Lawyer Fees and Lawyer Behavior in Litigation: What Does the Empirical Literature Really Say? *Texas Law Review*, *80*(7), 1943–1983.

Kritzer, H. M. (2007). Defending Torts: What Should We Know? *Journal of Tort Law*, *1*(3).

Legal   Rates   Calculator.   (2023).   Clio.   Retrieved   January   16,   2023,
from https://www.clio.com/resources/legal-trends/compare-lawyer-rates/

Lieberman, J. K. (1978). *Crisis at the Bar: Lawyers' Unethical Ethics and What to Do About It*.

Loftus, E. F., & Wagenaar, W. A. (1998). Lawyers' prediction of success. *Jurimetrics*, *28*(4).

Maurer, V. G., Thomas, R. E., & DeBooth, P. A. (1999a). Attorney Fee Arrangements: The U.S. and Western European Perspectives. *Journal of International Law & Business*, *19*(2).

Maurer, V. G., Thomas, R. E., & DeBooth, P. A. (1999b). Attorney fee arrangements: the US and Western European perspectives. *Nw. J. Int'l L. & Bus*, *19*, 272.

McGuire, K. J. (1995). Repeat Players in the Supreme Court: The Role of Experienced Lawyers in Litigation Success. *The Journal of Politics*, *57*(1), 187–196.

McKee, M. L., Santore, R., & Shelton, J. T. (2007). Contingent Fees, Moral Hazard, and Attorney Rents: A Laboratory Experiment. *The Journal of Legal Studies*.

Merrit, G. S. (1990). The Decision Making Process in Federal Courts of Appeals. *Ohio St. LJ*, *51*, 1385.

Nelson, P. G. (1970). Information and Consumer Behavior. *Journal of Political Economy*, *78*(2), 311–329. https://doi.org/10.1086/259630

Rhein, E. M. (1983). Judicial Regulation of Contingent Fee Contracts. *Journal of Air Law and Commerce*, *48*(1), 151.

Root, D. E. (2005). Attorney Fee-Shifting in America: Comparing, Contrasting, and Combining the "American Rule" and "English Rule." *Indiana International and Comparative Law Review*.

Ross, W. G. (1991). The ethics of hourly billing by attorneys. *Rutgers L. Rev*, *44*(1), 1.

Rule 1.5: Fees. (2022). American Bar Association. Retrieved February 4, 2023, from https://www.americanbar.org/groups/professional_responsibility/publications/model_rules_of_professional_conduct/rule_1_5_fees/

Santore, R., & Viard, A. D. (2001a). Legal Fee Restrictions, Moral Hazard, and Attorney Rents. *The Journal of Law and Economics*, *44*(2), 549–572.

Santore, R., & Viard, A. D. (2001b). Legal Fee Restrictions, Moral Hazard, and Attorney Rents. *The Journal of Law and Economics*, *44*(2), 549–572.

Schneider, H. (2012). Agency Problems and Reputation in Expert Services: Evidence from Auto Repair. *Journal of Industrial Economics*, *60*(3), 406–433.

Schneyer, T. (1998). Legal-process constraints on the regulations of lawyers' contingent fee contracts. *DePaul L. Rev*, *47*(2), 371.

Spence, M. (1973). Job Market Signaling. *Quarterly Journal of Economics*, *87*(3), 355.

Williams, V., & MacDonald, A. M. (1995). In Whose Interests: Evaluating Attorney Fee Awards and Contingent-Fee Agreements in Social Security Disability Benefit Cases. *Admin. L. Rev.*, *47*, 115.

Wollinksy, A. (1995). Competition in markets for credence goods. *Journal of Institutional and Theoretical Economics (JITE)/Zeitschrift Für Die Gesamte Staatswissenschaft,* 117–131.