The Pricing Structure of Legal Services: Do Lawyers Offer What Clients Want?

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Abstract
We analyze clients’ contract choices in auctions where Dutch law firms compete for standard cases such as labor disputes for individuals and collecting debts for businesses. In the auctions, lawyers can submit bids with any fee arrangement they prefer, including an hourly rate, a fixed fee, and a ‘mixed fee’: a time-capped fixed fee plus an hourly rate for any additional hours should the case take longer than expected. A game-theoretic analysis of this auction format reveals that clients should accept only fixed-fee bids in equilibrium. We estimate a simultaneous equation model that includes both the client’s and lawyers’ side. Qualitatively in line with our theoretical prediction, we find that clients strongly prefer fixed fees. Our results suggest that selecting a lawyer through an auction may benefit clients who face an incidental legal problem. More generally, our findings tentatively contradict lawyers’ often made argument that hourly rates are in a client’s best interest.

Keywords Lawyers’ fee arrangements · Clients’ choices · Simultaneous equation estimation

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1 Introduction

Hourly fees prevail as the typical fee arrangement for legal services in many countries. Commentators have proposed the hypothesis that law firms resist the pressure by clients to offer them alternative fee arrangements, such as fixed fees (Hadfield, 2000). As The Economist (2011) put it: “Law firms were often charging stiff rates for routine work […]. Clients are right to demand better value for money. […] They are asking for flat or capped rather than hourly fees.” In this paper, we address the question whether clients indeed prefer fixed fees over hourly fees.

We address this question on the basis of a unique dataset that involves clients’ contract choices in auctions for legal services. In the auctions, Dutch law firms compete for standard cases such as labor disputes for individuals and collecting debts for businesses. The auction format used is a ‘buyer-determined auction’ that allows lawyers to submit bids using any fee arrangement that they prefer, including an hourly rate, a fixed fee, and a ‘mixed fee’: a time-capped fixed fee plus an hourly rate for any additional hours should the case take longer than anticipated. The game-theoretic analysis of this auction format reveals that clients accept only fixed-fee bids in equilibrium.

We estimate a simultaneous equation model that includes both the clients’ side (the ‘demand side’) and the lawyers’ side (the ‘supply side’). Qualitatively in line with our theoretical prediction, we find that clients strongly prefer fixed fees. Our results suggest that selecting a lawyer through an auction may benefit clients who face an incidental legal problem. More generally, our findings tentatively reveal a contradiction between what clients prefer and lawyers’ frequent argument that hourly rates are in a client’s best interest.

We are not the first to study fee arrangements for legal services. Kritzer (2009) provides an elaborate overview of several fee regimes. While not applicable in our setting, the bulk of the (mainly theoretical) literature on fees for legal services deals with the analysis of success (‘contingency’) fees, since these are widely used in the United States.1 See, for example, Dana and Spier (1993) and Rubinfeld and Scotchmer (1993) for excellent early works, and Emons (2007) for a more recent study. Smith and Cox (1985) present empirical evidence of law firms that offer hourly versus fixed-fee contracts for standard cases. Based on a survey of 1500 US lawyers, they observe that the larger and more known is a law firm, the more likely is it to offer an hourly fee contract. These fee arrangements are found to be more expensive than fixed fees. Hadfield (2000) argues that fixed fees are relatively rare because of information asymmetries and market power in the market for lawyers. To our knowledge, we are the first to present empirical evidence of clients’ choice of fee arrangements, and thus raise questions as to the merits of lawyers’ still most-often used hourly rates.

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1 While widely used in the United States, success (‘contingency’) fees are controversial in the Netherlands: no cure – no pay is declared illegal. No cure – little pay is not forbidden, but the boundaries of what is allowed are fuzzy; see https://www.advocatenorde.nl/resultaatgerichte-beloning.
Our paper proceeds as follows: Sect. 2 provides background information on the auctions and the rules of the auction. Section 3 contains the game-theoretic analysis. In Sect. 4, we present our empirical implementation. Section 5 describes the data. The results of our empirical analysis are in Sect. 6. In Sect. 7, we discuss potential reasons why law firms often offer hourly fees despite our observation that clients prefer fixed fees. There, we critically discuss Hadfield’s (2000) claim that law firms’ informational advantages and market power explains why hourly fees are dominant in markets for legal services. Section 8 concludes.

2 Background and the Auction Rules

We first provide background information on the legal services auctions that comprise our sample. The auctions are organized by XS2Justice (XS2J): a franchise network for legal service providers in the Netherlands. In each auction, legal firms bid for a case that is offered by a client. Clients are typically private individuals and small- and medium-sized companies. Their legal problems include cases that appear in Dutch civil courts, such as labor disputes for individuals and collecting debts for businesses. Each client who signs a contract with a lawyer through the XS2J auctions pays the lawyer: There is no fee-shifting: Clients do not qualify for legal aid and do not possess legal-expenses insurance. Bidders are invited by XS2J from a shortlist of approximately 50 small- and medium-sized Dutch law firms.

The XS2J auctions are an often-used byproduct of the core business of XS2J: The franchisees of XS2J are legally skilled professionals who provide advice and assist clients in resolving disputes outside the court system. However, as the XS2J jurists are not members of the Bar Association, they normally cannot represent their clients in court. In situations where XS2J franchisees cannot take on a case, or when the client explicitly requests a lawyer, the case is put up for auction.

As in most countries, law firms in the Netherlands are divided into two broad categories: On the one hand there are a handful of top law firms that employ a large number of lawyers who perform highly specialized services, often on behalf of large multinational firms. On the other hand, there exists a large number of law firms with usually a small number of lawyers who offer a broad range of routine services to private people and small/medium-sized firms. The bidders in the XS2J auction are from the second category: The typical law firm in the auctions has one or two offices with about 15 lawyers in total.

The client in the XS2J auctions is either a private person or a small/medium-sized enterprise. The private persons are typically middle-income. Clients with low income are eligible for legal aid, where the fees for lawyers are fixed by the government. At the same time, we do not have any indication that the sample includes clients from the top tail of the income distribution, since the disputed amounts are fairly moderate (see also further below). Similarly, large firms usually have in-house legal professionals who deal with the types of cases that are auctioned through the XS2J auctions. Furthermore, these large firms are in a position to shop around and acquire a competitive offer from a law firm without the assistance of an intermediary such as XS2J.
The cases that are put up for auction are typical civil court disputes of private people—family matters, labor disputes, and consumer disputes—and the usual conflicts of small/medium-sized businesses: contract disputes and collecting debts. Criminal cases or highly specialized fields such as competition law are not allocated through the XS2J auctions. At the same time, the production of standardized documents such as wills, marital agreements, and conveyancing services fall outside the scope of law firms in the Netherlands. The production of these documents is the exclusive domain of notaries.

Each auction starts with XS2J’s sending bid invitations to a number of law firms. The invitation is accompanied by a brief description of the case, as well as a clear formulation of what services the lawyers are expected to submit a bid on: for example, legal advice, a second opinion on a contract, representation in court, and so forth. Bidders do not know the identities of the other law firms that have been invited to participate in the auction. Each client who accepts a bid and signs a contract with a lawyer through the XS2J auctions pays the lawyer: There is no fee-shifting, and clients do not qualify for legal aid and do not possess legal-expenses insurance.

The XS2J auction is a buyer-determined auction, which proceeds as follows: The lawyer-bidders independently submit the fee arrangements of their choice, as well as comments about the case. In principle, any fee arrangement is allowed, including hourly rates, fixed fees, and mixed fees: time-capped fixed fees plus an hourly rate for any additional hours should the case take longer than expected. After receiving the bids, an XS2J jurist discusses them with the client.

Apart from the fee arrangement and potential comments made by the lawyers, clients receive information on the professional experience of the lawyers concerned measured by the number of years they have been practicing law. The client is also informed of which city the lawyers have their offices, but the lawyers’ names and addresses are not revealed in advance. On the basis of the bids and the information provided, the client chooses the winning bidder, if any. (The client can decline to accept any of the bids.) The lawyers who submitted a bid—but were not selected by the client—receive information on the financial terms of the winning bid (type and amount(s)), office location, and the winning bidder’s professional experience.

3 Theory

In this section, we derive the equilibrium properties of the XS2J auction in the following environment: We consider a risk-neutral client who auctions a legal case to one out of a set of \( n \) risk-neutral lawyers. Each lawyer \( i \) = 1, ..., \( n \) possesses two-dimensional private information \( (h_\downarrow, c_\downarrow) \) about the case, where \( h_\downarrow \) is the (expected) number of hours she will spend on the case if the client assigns the case to her and \( c_\downarrow \) is her hourly (opportunity) costs. Consequently, if lawyer \( i \) gets the case, that lawyer’s costs will be \( h_\downarrow c_\downarrow \). We assume that lawyer types \( (h_\downarrow, c_\downarrow) \) are distributed

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\(^2\) See, e.g., Engelbrecht-Wiggans et al. (2007) and Fugger et al. (2016) for an experimental analysis of buyer-determined auctions.
according to a smooth distribution function with full support over the set $[h_{i\downarrow}, \bar{h}_{i\downarrow}] \times [c_{i\downarrow}, \bar{c}_{i\downarrow}]$, where we allow for correlation between $h_{i\downarrow}$ and $c_{i\downarrow}$. The number of hours $h_{i\downarrow}$ is ex post verifiable by the client.\(^3\)

Lawyers compete in the following bidding mechanism: Each lawyer can submit a three-dimensional bid $(p_{F}, p_{H}, h)$, where: $p_{F}$ is a fixed fee that the bidder-lawyer wishes to obtain if the client selects her; and $p_{H}$ is her hourly rate for any hour that is spent on the case that exceeds $\bar{h}$; If the client picks this lawyer, the client will pay her $p_{F} + p_{H}\max\{0, h_{i\downarrow} - \bar{h}\}$. Notice that fixed-fee bids, hourly-rate bids, and mixed-fee bids can all be expressed by a three-dimensional bid: A fixed-fee bid has $p_{H} = 0$; an hourly-rate bid has $p_{F} = \bar{h} = 0$; and a mixed-fee bid has $p_{F} > 0$, $p_{H} > 0$, and $\bar{h} > 0$.

The resulting utility for the lawyer equals

$$U_{i}(p_{F}, p_{H}, h) = p_{F} + p_{H}\max\{0, h_{i\downarrow} - \bar{h}\} - h_{i\downarrow}c_{i\downarrow}$$

if the client selects her to pursue her case, and zero otherwise. After observing all bids, the client chooses one lawyer, if any. We assume that a client only cares about selecting the least expensive lawyer: We abstract from moral-hazard issues; we will come back to the moral-hazard issues at the end of this section and in the discussion in Sect. 7.3.

As a solution concept, we use the perfect Bayesian Nash equilibrium, which requires that the client best responds to the lawyers’ strategies, given consistent beliefs. The client aims to minimize her expected costs: She will assign a score

$$s(p_{F}, p_{H}, h) = p_{F} + p_{H}\left(E\{h_{i\downarrow}|h_{i\downarrow} > \bar{h}\} - \bar{h}\right)P\{h_{i\downarrow} > \bar{h}\}$$

to each bid $(p_{F}, p_{H}, h)$, where $E\{h_{i\downarrow}|h_{i\downarrow} > \bar{h}\}$ and $P\{h_{i\downarrow} > \bar{h}\}$ are based on the client’s beliefs about the number of hours that the lawyer will spend on the case. The client selects the lawyer whose bid produces the lowest score.

In the perfect Bayesian Nash equilibrium, the client accepts only fixed-fee bids. The proof is by contradiction: We start by assuming that a non-zero mass of lawyers submits a non-fixed-fee bid: a bid $(p_{F}, p_{H}, h)$, where $p_{H} > 0$ and $h_{i\downarrow} > \bar{h}$. Then, we proceed in two consecutive steps: First, we show that the equilibrium must be strictly separating in terms of $h_{i\downarrow}$. Suppose, to the contrary, that two lawyers who differ in terms of the number of hours that are needed for the case generate the same client beliefs with regard to the number of hours that will be spent on the case. Then, a lawyer $m$ for whom $h_{m} < E\{h_{i\downarrow}|h_{i\downarrow} > \bar{h}\}$ is strictly better off by submitting some fixed-fee bid instead of the original bid $(p_{F}, p_{H}, h)$, which is a contradiction to the assumption that the lawyer submits a non-fixed-fee bid.

The second step is to show that a lawyer best responds to the other lawyers who submit strictly separating non-fixed-fee bids either by pretending to need fewer hours for the case than she actually does or by effectively submitting a fixed-fee bid. As a result, a contradiction emerges either to the equilibrium assumption or to the

\(^3\) Analogously, the lawyer is able to be reimbursed for a maximum number of $m(h_{i\downarrow})$ hours, where $m$ is a strictly increasing function.
assumption that the lawyer submits a non-fixed-fee bid. Overall, in equilibrium, it must be the case that either \( p_H = 0 \) or that \( h \) is so high that it is irrelevant (i.e., \( h \geq h_* \))—so, effectively, only fixed-fee bids are submitted, and hence accepted, in equilibrium.

**Proposition** In the perfect Bayesian equilibrium of the XS2J auction, the client accepts only fixed-fee bids. The lawyer that offers the lowest fixed-fee bid wins the auction.

**Proof.** See Appendix 1.

Intuitively, the client interprets non-fixed-fee-bids as coming from lawyers who need many hours to complete the case. Lawyers who need only a few hours best respond by offering fixed-fee contracts, which induces the client to prefer such contacts over other contracts. Unraveling occurs, and an equilibrium is reached where all lawyers submit fixed-fee bids.

Our result is robust to moral hazard in the sense of lawyers’ charging consumers for more hours than is actually needed: Anticipating that consumers are worried about overcharging, lawyers have an additional reason to submit fixed-fee bids. Another moral-hazard concern is that lawyers spend fewer hours on the case in the case of a fixed fee than if they can charge by the hour. If such moral-hazard concerns are important, unravelling to only fixed-fee bids may not occur. In Sect. 7.3, we check in the data whether the quality that is delivered—as a proxy for the number of hours that are spent on the case—depends on the kind of bid that is submitted, so as to examine how empirically relevant this type of moral hazard is in our dataset. We find that this type of moral hazard is not a concern in our auctions.

Based on our theoretical analysis, we hypothesize that clients prefer fixed fees over other fee arrangements. We test this hypothesis on the basis of a unique dataset that involves clients’ contract choices in auctions for legal services, which we discuss in the next section.

### 4 Data

We present our data in two subsections. In subsection 4.1, we discuss the sample of legal cases that were auctioned by XS2J. In subsection 4.2, we provide evidence for the representativeness of the legal cases and law firms in our sample for the Dutch market for legal services.

#### 4.1 Sample

Our sample contains information on all auctions that were organized by XS2J in the period November 2004 to December 2008, which also marks the start of these
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Auctions. All bids are observed, except for a limited number of (non-winning) bids. In total, the original dataset contains 95 auctions in which 374 bids were submitted. However, some auctions include bids that were based on a success (contingency) fee: where the remuneration of the lawyer depends in some way on the outcome of the case. Given the complexity and questionable legal status in the Netherlands, auctions with success-fee bids are excluded from the sample. The final sample that is used for our regression analysis contains 283 bids that were submitted in 86 auctions.

As Table 1 shows, our sample contains hourly-fee bids, fixed-fee bids, and mixed-fee bids. It further shows the auctions in which the case was awarded among the bidders, classified according to the combination of fee types available. This gives us a first insight into how hourly-fee bids fare against fixed-fee bids and mixed-fee bids. For example, as can be seen from the first row, there are 18 auctions where the three bid types are simultaneously offered. In the auctions with this combination of bid types, 29 fixed-fee bids, 29 mixed-fee bids and 31 hourly-fee bids are present.

While the hourly-fee bids outnumber the fixed-fee and mixed-fee bids in almost any combination of bid-types offered, they never win the most auctions in any combination. On the other hand, whereas mixed-fee bids perform best when the three bid-types are offered (see first row), they do relatively worse in terms of winning

Table 1 Fee arrangements offered in the XS2J auctions

| Fee types present | # Auctions | Total # bids | # Winning bids |
|-------------------|------------|--------------|----------------|
|                   |            | Fixed | Mixed | Hourly | Fixed | Mixed | Hourly |
| Fixed, mixed, hourly | 18 | 29 | 29 | 31 | 3 | 9 | 3 |
| Fixed, mixed       | 4          | 5    | 4    | -     | 1    | 1    | -     |
| Fixed, hourly      | 10         | 18   | -    | 17    | 7    | -    | -     |
| Mixed, hourly      | 24         | -    | 40   | 59    | -    | 14   | 3     |
| Fixed              | 8          | 16   | -    | -     | 6    | -    | -     |
| Mixed              | 7          | -    | 9    | -     | -    | 3    | -     |
| Hourly             | 15         | -    | -    | 26    | -    | -    | 6     |
| Total              | 86         | 68   | 82   | 133   | 17   | 27   | 12    |

Auctions are grouped by types of bids present. # Auctions represents the number of auctions in each group. Total # bids represents the number of bids per bid type that were offered in each group. # Winning bids represents the number of bids per bid type that won in each group.

4 This has as positive consequence that our data does not suffer from a censoring problem, as there are no XS2J auctions prior to our sample.
5 Our database is based on the e-mail box of the organizers of the auctions. The bids that we do not observe—at most five bids—were submitted by fax.
6 While widely used in the United States, success (contingency) fees are controversial in the Netherlands: no cure-no pay is illegal. No cure-little pay is not forbidden, but the boundaries of what is allowed are fuzzy.
7 We did not observe other fee structures, such as an hourly rate combined with a maximum total fee, even though the rules allowed for them.
when offered only against fixed fee bids (they both win once; see row two). Furthermore, fixed fee bids always win when pitched against hourly rate fees only (see row three), whereas mixed fee bids do not always win when competing against only hourly fee bids (row four). Also note that in 30 of the auctions that were initiated, no winner was awarded.

### 4.2 Representativeness of the Cases and the Bidders in the XS2J Auction

Before we present our empirical analysis, we address the question of the extent to which the XS2J cases and bidders are representative for the Dutch market for legal services. The XS2J auctions concern civil cases for which a lawyer is needed—to be handled in civil courts.  

We start by comparing the legal cases in our sample to the general population of legal cases in the year 2005 in terms the monetary values and type of plaintiff/defendant; we use aggregate statistics that have been documented by Van Velthoven (2007).

Table 2 presents the distribution of the monetary value for the XS2J sample cases and compares these values to the cases that were initiated by summons in civil courts in the Netherlands. As can be seen in the first column, the XS2J cases represent a wide range of cases in terms of monetary value. Moreover, the distribution of values in the XS2J sample follows closely that of summons in civil courts. Indeed, the categories virtually follow the same ordinal ranking for both the civil court cases

| Monetary Value Range | Legal cases in XS2J auctions (%) | Dutch civil court cases (%) |
|----------------------|---------------------------------|----------------------------|
| Zero                 | 51.2                            | 34.1                       |
| €1—€5,000            | 0.0                             | 2.9                        |
| €5,001—€10,000       | 10.7                            | 18.7                       |
| €10,001—€20,000      | 10.7                            | 17.5                       |
| €20,001—€100,000     | 19.0                            | 19.9                       |
| €100,001 -           | 8.3                             | 6.9                        |

Statistics of civil courts are based on 51,877 cases that were initiated by summons in Dutch civil courts in 2005 (source: Van Velthoven, 2007)

8 Civil courts in the Netherlands operate according to the Civil Code books, largely based on the Napoleonic Code (Meijer & Sjoerd, 2002). There are four main categories in the Civil Code: “Natural Persons and the Family”; “Legal Persons”; “Obligations and Contracts”; and “Patrimony and Property.”.

9 Quantitative information on Dutch civil court cases is scarce, as information registration is done at the local court level and no standardized procedures existed for the period of our sample. The consequence of this is that, for example, exact case classifications are not available, and for many cases there is no information at all. Although not representing the full sample of cases for the above-mentioned reasons, Van Velthoven (2007) is to our knowledge the best available source of information for the time-period of our sample.
and the XS2J sample. For example, for both samples, zero financial value is the largest category (51% of the XS2J cases and 34% of the summons cases). A two-sided $\chi^2$ test confirms that both samples show the same distribution of cases over the categories.

In terms of type of party, Table 3 characterizes natural persons versus legal entities by their role in the dispute in both the XS2J and civil courts samples. First, as can be seen from the top half of the table, the XS2J auctions represent a fairly even distribution in this dimension. Furthermore, in terms of type of plaintiff, the distribution is similar for the sample of XS2J and Dutch civil court cases: 59% are a natural person for the XS2J cases and 51% for the civil court cases. In terms of defendant, a similar pattern occurs again: 41% are natural persons in the XS2J sample and 39% in all civil court cases.

Finally, we checked whether the bidders in our sample are representative in terms of the fee that they offer in the regular market. Of the 46 law offices in our sample, one had ceased to exist, and 12 did not provide information on their fee structure. This leaves us with 33 law offices that had a website at the time of the auction that offered information on fee structures. As can be seen from Table 4: 21 offices (about 64%) offered hourly rates only, while for seven (about 21%) the default offer was hourly rates, although they mentioned that other arrangements were available.

To compare these numbers with the fee arrangements that are offered by law offices in The Netherlands, we drew a random sample of about 360 law offices from the population of lawyers that were active during the period under research and collected information on the fee structures that their law offices’ websites offer. As Table 4 shows, of the 319 offices for which there is information on fee structures,
277 (87%) offer only an hourly fee and make no mention of any other fee arrangement; 13 offices (4%) offer a standard hourly rate, but mention somewhere less prominently on their web pages that, although hourly rates are the rule, other fee arrangements are possible in special circumstances. The law firms that participated in the auctions are representative in the sense that they do not differ significantly in terms of offering hourly fees only or as the default (84.8% and 90.9% for XS2J bidders and the general population respectively).

Overall, we have good reasons to believe that our sample is representative for Dutch civil legal practice in terms of monetary value, the types of parties that were involved (although the number of natural persons is smaller in our sample than in the general population), and the fee arrangements that are offered in the regular market.

### 5 Empirical Implementation

We now explain our empirical implementation and start by specifying the variables that we use in our analysis: in modeling a client’s bid type choice (the ‘demand side’) and also the lawyer’s bid type offer (the ‘supply side’). We include variables that are related to the characteristics of bids, lawyers, clients/cases and auctions, based on what clients ‘see’ or ‘know’ at the time of deciding whether to accept the winning bid; the same holds for lawyers at the time of submitting the bid.

First, in terms of a client’s choice, we define our dependent variable $Win$ as a dummy variable that takes the value 1 when the submitted bid was selected by the client in the auction, and 0 otherwise (see Table 5 for the exact definition and summary statistics of this and all subsequent variables). Our prime explanatory variables of which bid wins are, of course, the types of bids offered. These are defined as dummy variables: $Fixed$, $Mixed$, and $Hourly$, respectively. Note, though, that we take hourly fee bids as the base in both the demand and supply sides; we therefore include only fixed fee and mixed fee related variables as explanatory variables.
We include a measure for the price level of each bid. It is not straightforward to rank bids in terms of expected payment, given the different bid types that are present and given the fact that clients have to make their choices with no ex-ante information.
on the number of hours that a particular lawyer will work on a case.\textsuperscript{10} We therefore propose a definition that is based on a ‘mechanical’ ex-ante calculation of payment that requires no knowledge of the hours that a lawyer will spend on the case:

We define a bid to be higher if there is at least one other bid that yields a lower payment to the client for all possible ex-post number of hours worked. Our definition of a higher bid corresponds, thus, to what is called a dominated bid or dominated strategy in game theory (see, for example, Mas-Colell et al., 1995). Dominated is a dummy variable that equals 1 if and only if the bid is dominated: if there is at least one other bid that yields a lower payment to the client for all possible ex-post number of hours worked. Thus, a fixed fee is classified as dominated when there is at least one other fixed fee that is lower. Likewise, an hourly fee is dominated if there is at least one hourly fee that is lower. As the relative comparison of mixed fees is relatively complicated, we give two examples of dominated mixed fees in Appendix 2.\textsuperscript{11}

A client’s choice of the winning bid may not depend only on the type and the level of the bids. Besides bid characteristics, clients’ information on lawyers’ characteristics may influence their choice. As was mentioned above, clients are informed of the length of the professional experience of lawyers (in number of years). In the absence of other signals, this might provide information for the client, as she may believe that more experienced lawyers are better than inexperienced lawyers. We include professional experience in relative terms: the ratio between the experience of the bidding lawyer and the experience of the most experienced bidder who submitted a bid in the given auction, which defines the variable Experience.

Furthermore, although the client is not informed of the identity of the lawyer, she is told in which town the lawyer has his office. As the client potentially needs to visit the lawyers’ office on a number of occasions, it may be that she takes the geographical distance between her own residence and the lawyer’s office into account. We include the lawyer-client distance relative to the most distant lawyer in the auction (variable Distance).\textsuperscript{12}

The above-explained variables are used empirically to model a client’s choice. The following variables constitute the determinants of lawyers’ offered bid-types: First, the dependent variables are (of course) the bid types that are offered: Fixed, Mixed, and Hourly. The variables that could explain these bid types are, first, case/

\textsuperscript{10} There are no official recommendations given in the Netherlands for all case types that we have in our sample, despite these being relatively standard. Also, the auction organizer XS2J does not provide for an estimate of the expected number of hours. Thus, it is hard for a client to even have a rough estimate of the number of hours that is reasonable in such disputes.

\textsuperscript{11} Note that a mixed-fee bid can in some circumstances be compared to a fixed or an hourly fee. If a mixed-fee bid has a dominated flat-fee part as compared to a competing fixed fee, it can be labeled as ‘dominated,’ as for any number of hours worked on the case the mixed fee will yield a dominated payment as compared to the fixed fee. Similarly, a mixed fee may yield a dominated payment for any possible realization of hours compared to a relatively low hourly fee (see Felső et al., 2015, for a more detailed exposition).

\textsuperscript{12} Note that absolute values of experience or distance could in principle yield different results, as some auctions are not rewarded, which might be the case because all bidding lawyers are insufficiently experienced or are located too far away. However, our empirical results do not change qualitatively when we include absolute values for experience and distance, or both relative and absolute values.
client characteristics on which the lawyers have information at the time of bidding: whether the client is a private person (*Private*); whether the client is the plaintiff (*Plaintiff*); and whether the case does not have an estimate of the expected financial value (*Non-monetary*). These cases are typically more complex and potentially have a higher (emotional) value for clients. Indeed, they treat issues such as child custody, adoption, and family and neighbor disputes. The outcome of these cases arguably matter more to people than, say, a late delivery of a large batch of fruit (of which the value is relatively easy to estimate).

Further, we include the size of the law office (in terms of number of lawyers) as this might indicate something about the capacity (constraints) and professionalism of the law office. Also, the lawyer’s experience and knowledge in the auctions may have an influence on the bid types that are offered: First, we include a dummy variable that indicates whether the current auction is the first time that the lawyer is participating in auctions that are organized by XS2J (*First time bid*). Furthermore, if the lawyer won in the previous auction in which she participated, we set a dummy variable equal to one (*Last bid won*).

We also include a series of variables that relate to what the lawyer has seen/done in other auctions: (i) whether a fixed or mixed fee bid, respectively, won in the previous auction in which the lawyer participated (*Fixed won previous auction*, and *Mixed won previous auction*); and (ii) the frequency of fixed and mixed-fee bids, respectively, that have been offered in other auctions by the lawyer’s office (*Frequency fixed*, and *Frequency mixed*).

We also include a variable—*Large auction*—that indicates whether the auction is large with respect to the number of bids, where we define ‘large’ as being higher than the median (3 bids). We decided to use a dummy variable around the mean instead of a continuous variable, as the distribution of the number of participants is skewed.\(^{13}\)

We are now ready to present our exact econometric specification, which models both the lawyer side and the client side of the XS2J auction. The lawyer side is captured by two equations, as we observe that there are three possible bid choices for a lawyer—a fixed-fee bid; a mixed-fee bid; or an hourly-fee bid—and these choices are unordered. We estimate, therefore: (i) an equation that explains a lawyer offering a fixed-fee bid (rather than a mixed fee or an hourly fee); and (ii) an equation that explains a lawyer offering a mixed-fee bid (rather than a fixed fee or an hourly fee). On the client side, we explain whether or not the client accepts a bid as a function of the kind of bid (with the hourly fee as base).

As a consequence, we estimate the following system of three equations:

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\(^{13}\) The main results on clients’ preferring fixed-fee bids do not change when we use a continuous variable (in logs); however, some of the supply-side variables become less significant in the log specification.
where \( i \) refers to the lawyer and \( k \) to the auction/client. \( \text{Fixed}_{ik} \) and \( \text{Mixed}_{ik} \) are dummy variables indicating whether a lawyer bids a fixed fee or a mixed fee, respectively. \( \text{Win}_{ik} \) is a dummy variable that indicates whether lawyer \( i \) in won auction \( k \). \( X_1_{ik} \) and \( X_2_{ik} \) are lawyer-auction specific variables, \( Y_1_{k} \) and \( Y_2_{k} \) are case/client specific variables, and \( \varepsilon_{1,ik}, \varepsilon_{2,ik} \) and \( \varepsilon_{3,ik} \) are the error terms for each equation.

We naturally consider the type of bid that is chosen and which type of bid is offered as potentially endogenous. Moreover, our measure of auction size—the dummy variable ‘large auction’—is potentially endogenous as well, as the participation decisions in an auction may be driven by the characteristics of the case.\(^{14} \)

We have opted for a linear probability model (LPM) over a logit or a probit model because such non-linear models are too unstable for the relatively low number of observations that we have in our system-setting (see Angrist & Pischke, 2008, for an extensive elaboration on this point). However, our results are virtually the same when we model: (i) the lawyer side as one equation with unordered choices and estimate with a multinomial method; and (ii) the client side as a single-equation conditional logit estimation. We include and discuss these results as a robustness check.

We use the three-stage least square (3SLS) method to estimate the above system of equations. A 3SLS estimation is adequate when endogenous variables appear on the right-hand side of simultaneously estimated equations, as it combines the system estimation of SUR (seemingly unrelated regression estimation) with the instrumental variables method of 2SLS. 3SLS has the same advantages relative to 2SLS that SUR has relative to OLS: It yields efficiency gains by taking account of cross-equation correlation of errors across equations (Zellner & Theil, 1962).

### 6 Estimation Results

Table 6 presents the regressions results. First off, a fixed-fee bid is significantly more likely to win than an hourly-fee bid (at the 1% level), whereas a mixed fee bid is not more likely to win (first column with dependent variable \( \text{Win} \)). These results are, thus, qualitatively in line with our main hypothesis that clients prefer fixed-fee bids over other fee arrangements.

We further find that the variable Dominated has a significantly negative effect on the likelihood that the client selects a bid. This finding also suggests that the client does not interpret high prices are a signal of high quality. We also find a significantly positive effect of the lawyers’ experience on the likelihood of being chosen. As was indicated above, clients are informed of the length of the professional experience of

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\(^{14}\) All other variables in the system are by default treated as exogenous to the system and uncorrelated with the disturbances, and are therefore taken to be instruments for the endogenous variables.
lawyers. In the absence of other signals, this might provide information for the client as she may believe that more experienced lawyers are better. The distance to the law firm’s office does not have a statistically significant impact on the likelihood of a bid winning the auction. Notice further that the demand side yields a \( \chi^2 \) value of 30.53, which corresponds to a \( p \) value of 0.000, thereby strongly rejecting that the demand equation’s parameters are zero. In other words, the demand equation is well specified.

For the supply-side results, we now focus on the type of bid that lawyers submitted (the last two columns). Lawyers are weakly significantly more likely to submit a fixed-fee or a mixed-fee bid if the client is a private person rather than a business. Fixed fees are weakly significantly less likely submitted when the client is the
plaintiff. We find further some evidence that lawyers bid with the same type of bid when they or others win with it in other auctions in which they participate—particularly for mixed-fee bids. Moreover, lawyers are weakly significantly more likely to bid fixed fees when they won in the previous auction. This suggests that bidding behavior evolves in the direction of the equilibrium where the client only accepts fixed fees, as predicted by our theory.

Notice that the lawyer’s side renders Chi² values that correspond to high p values, with a p value of 0.18 for the fixed-fee supply equation and 0.07 for the mixed-fee supply equation, respectively. This indicates that especially the fixed-fee equation does not predict so well who bids fixed fees. Furthermore, the lawyer’s side does not explain much in variation (the R² is very low), and the impact of the individual variables on the lawyer’s choice of fee structure is low in terms of significance.

Moreover, the simultaneous estimation of both client and lawyer side yields a negative R² for the demand side. This is not atypical for this type of estimations but is an indication that the structural model predicts the dependent variable worse than a constant-only model. Still, the parameter estimates of the client side are good in terms of individual significance. On this basis, we are comfortable with the estimates of our system of equations overall but would refrain from making bid-type predictions on the base of our model (where the single-equation client side might be better suited).

We also briefly report here the single-equation specifications, as these can be estimated with non-linear methods. In particular, we estimate: (i) the client side as a single-equation logit estimation; and (ii) the lawyer side as one equation with unordered choices, which is estimated with a multinomial method. As can be seen from Table 8 in Appendix 4, the results for the logit demand estimation are virtually the same in sign and significance, with one important difference: The mixed-fee bids are preferred over the hourly fee bids (where this was not the case in our system-of-equations estimation). Indeed, while most of the results are roughly similar for both methods, we attribute the fact that a mixed-fee bid is not being chosen by clients in our system of equations to potential issues of endogeneity in the single-equation estimations that are taken care of in the simultaneous estimation of demand and supply.

Furthermore, as can be seen in Table 9 in Appendix 4, the multinomial estimation leads to some additional variables in the dimension of lawyer/bid characteristics—such as the office rental cost as determinant for bidding a fixed fee—being significant.

15 With the 3SLS estimation method, some of the regressors enter the model as instruments when the parameters are estimated. However, the actual values, not the instruments for the endogenous right-hand-side variables, are used to determine R-squared. The model residuals are thus calculated over a different set of regressors from those used to fit the model. See https://www.stata.com/manuals13/rreg3.pdf on page 11 for a detailed explanation of a structural model with simultaneous estimation of demand and supply with a negative R².
7 Discussion: Why do Law Firms Commonly Charge by the Hour?

Our theoretical and empirical results suggest that clients prefer fixed fees over hourly rates for routine legal cases. However, as we noted in Sect. 4.2, hourly fees tend to be the dominant fee arrangement in the market for legal services—*even for the law firms that bid in the XS2J auctions*. This raises the question of why law offices tend to offer hourly fees rather than fixed fees in the regular market, in contrast to the outcomes in the auctions. Three potential sources come to mind: (i) information asymmetry; (ii) market power; and (iii) incentives. These are discussed in Sects. 7.1–7.3, respectively.

7.1 Information Asymmetry

Information advantages may exist on both sides of the market: Clients are likely to be better informed about the specifics of their case than are the law firms. Imagine that law firms face uncertainty about the number of hours that are needed for a legal case. Notice that such uncertainty will not affect our theoretical results, as these are based on the assumption of risk-neutral law firms. However, risk-averse law firms may prefer to charge hourly fees, as this allocates the risk to the client. In fact, an hourly fee offers full insurance to the risks related to the workload of a case.

In turn, lawyers may have several informational advantages over clients: First, for the client it is hard to assess the quality of lawyers (Hadfield, 2000). For routine cases, such as the ones in the XS2J auctions, the main quality dimension is the time that is needed for the case, which may vary among lawyers. By charging an hourly rate, a lawyer who needs much time for a case has an incentive to work for the client, as the lawyer is fully compensated for the time spent. Second, legal services have the characteristics of credence goods: Clients often do not know exactly what services they need, nor how much they should pay for them (Dulleck & Kerschbamer, 2006).

As a result, lawyers prefer charging hourly fees over fixed rates because the latter allow them to ‘overtreat’/ ‘overcharge’ clients: working longer on a case than is really needed, or billing more hours than are actually used. Our theoretical analysis shows that auctions may attenuate the consequences of information asymmetry because the equilibrium unravels to an outcome where the client accepts only fixed-fee contracts. Indeed, auctions have traditionally been advocated as a way for

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16 In the area of construction, Bajari and Tadelis (2001) show that sellers prefer cost-plus contracts over fixed-price contracts for relatively complex projects, which suggests risk aversion on the sellers’ side.

17 For example, it is difficult for a client to assess the number of hours that are actually devoted to a case. Information about what would be a ‘reasonable’ number of hours for certain types of cases may be lacking. Furthermore, even if the client believes that the bill is unreasonably high, she may not benefit from filing a complaint. In the Netherlands, a disciplinary commission may reprimand a lawyer who overcharges, but it does not have the competence to impose any financial compensation. These disciplinary measures are also confidential: The identity of the professional who has received a reprimand is not published. This means that clients who seek a lawyer have no information on past complaints about a particular lawyer’s billing practice. See Baarsma and Felsö (2005).
the uninformed party to deal with information asymmetries (McAfee & McMillan, 1987).

### 7.2 Market Power

Hadfield (2000) argues that hourly fees prevail due to law firms’ enjoying market power. Two conditions are necessary for Hadfield’s (2000) claim to be consistent with our observation that hourly fees are less prevalent in the auctions than in regular markets: (1) Law firms enjoy more market power in regular markets than in the auctions; and (2) law firms that enjoy market power have no incentive to deviate from the prevailing hourly-fee structure. We start by discussing potential sources for market power. Then, we elaborate on the second condition.

Market power may be rooted in consumer search costs (Burdett & Judd, 1983). Searching for a lawyer is costly because from the searchers’ perspective, the legal market is opaque. Price information on the websites of law firms is in general too vague for consumers to make an informed decision. A typical website of a law firm states that the firm’s fees depend on the complexity of the case and the financial strength of the client. To find out what that means, one needs to discuss the case extensively with a lawyer in person. Thus, even if a first consultation is for free, the client must invest a considerable amount of time to acquire a quote. It logically follows that for most clients it would be costly to obtain more information through soliciting competing offers from other lawyers. In the auctions, search costs are modest (at most) because the client obtains competing price offers from several law firms.

Moreover, institutional barriers to entry are arguably not stronger for the auctions than for regular markets. In both cases, the right to proceed in a civil court is reserved to lawyers who have been admitted to the Bar Association, which require an academic degree in law and a multi-year traineeship that is supervised by a registered and experienced lawyer. In addition, regulation restricts competition between registered lawyers as professional rules imply numerous limitations on how lawyers may pursue their business (Baarsma & Felső, 2005). For instance, there are limitations on: employment (a lawyer may be hired only by another lawyer or another registered professional, such as a notary); control and ownership of a law firm (a law firm may be owned and controlled only by lawyers); and cooperation (which is allowed only with other licensed professionals).

While there may perhaps be some indications—mainly based on search cost arguments—that law firms enjoy more market power in regular markets than in the auctions, the question remains why that implies that hourly fees prevail in regular markets in contrast to the auctions. Indeed, there is a plethora of detailed questions that beg for an answer: Why do firms that enjoy market power not simply charge larger fixed fees? Are the hourly rates that are offered in regular markets an artifact of a multi-transaction relationship between lawyer and client? Are the fixed-fee offers in the auctions an artifact of the one-time lawyer/client interaction? Do firms in the auctions offer fixed fees in the hope of starting a long-run relationship with the client? Why do we observe fixed-fee contracts in other contracting situations (such as
home renovation) where similar switching costs apply as in markets for legal services? As our data do not allow us to answer such questions, we leave them for further research.

### 7.3 Incentives

Commentators have argued that hourly fees incentivize lawyer to devote sufficient time and effort to a case, in contrast to fixed fees. As Rhode (1985, 635) puts it: “[M]ost lawyers will prefer to leave no stone unturned, provided, of course, they can charge by the stone.” Consequently, fixed fees may be infrequent because they elicit minimal effort on the lawyer’s side, which is against a client’s best interest. We checked this claim by contacting 24 XS2J clients in March 2011: We inquired about the quality of the services that had been offered by the lawyers that they had selected through XS2J.\(^{18}\)

Table 7 shows that 19 clients were (very) satisfied, while four said that the service was acceptable, that is, got a ‘pass.’\(^{19}\) Only one client reported that she was not satisfied. Although this client had chosen a fixed fee bid, we find no statistically significant differences between the level of satisfaction and the type of bid.\(^{20}\) These responses suggest that: (i) there are no problems with lawyers’ effort level in general; and (ii) there is no connection between the bid type and effort level.

### 8 Conclusion

In this paper we analyze clients’ choices of contracts in auctions where lawyers compete for routine cases. Our dataset has the unique feature that lawyers submit bids with the fee arrangement of their choice. We observe offerings of hourly rates, fixed fees, and mixed fees. This allows us to study which bid type clients choose. We

\(^{18}\) The reason for not having a higher response rate is that we did not have up-to-date contact details; we tried to contact clients in March 2011, whereas the contact details date back to the period 2004–2008 (when the auctions took place).

\(^{19}\) Unfortunately, we could not gather information on the total sum paid and the number of hours worked on the case. Clients expressed difficulties in remembering these amounts and also a reluctance to provide financial information.

\(^{20}\) The correlation between satisfaction and fixed fee bids is \(−0.17\) (with a \(p\) value of 0.43), whereas with mixed fee bids it equals \(0.12\) (\(p\) value 0.57) and with hourly fee bids it is \(0.05\) (\(p\) value 0.82).
find that clients strongly prefer fixed fees. Our results suggest that hourly rates—the current dominant price structure in markets for legal services—are not what clients prefer; whether clients’ preferences for fixed-fee arrangements are in their best interests—in contrast to lawyers’ often stated claim that hourly fees best serve their clients—remains an open question.

Our theoretical analysis shows that competition in an auction pushes the bidding lawyers towards offering fixed fees—which is consistent with what we observe in our data. Why, then, do hourly fees prevail in regular markets, in contrast to the outcome in the XS2J auctions? We have argued that hourly fees are favored by lawyers as the hourly fees insure the lawyers against uncertainty about the number of hours that are needed for the case and to exploit informational advantages. Moreover, according to Hadfield (2000), hourly fees are common in the regular market for legal services since law firms have market power, which may be rooted in high search costs, institutional entry barriers, and regulation that limits competition between practicing lawyers. However, an open question is why law firms that enjoy market power have no incentive to deviate from the prevailing hourly-fee structure.

Our findings suggest that policy measures that deal with lawyers’ informational advantages may induce lawyers more frequently to offer fee arrangements that clients prefer. As Winston et al. (2011, 98) put it: “Our concerns about inefficiencies in the legal profession are shared to some extent by practicing lawyers and government policymakers, but they have yet to call for the sweeping reforms we call for here.” Our results suggest that auction platforms like XS2J can contribute to such ‘sweeping reform.’ Indeed, auctions have traditionally been advocated as a way for the uninformed party to deal with information asymmetries (McAfee & McMillan, 1987).

The usual safeguards on adequate legal service provision are in place through the auctioneer’s selection of lawyers who are invited into the auction. More generally, our results suggest that buyers may not get what they want in other industries where hourly fees are the norm: ranging from auditing services and management consultancy to real-estate development and infrastructure maintenance. Follow-up research may reveal to what extent buyer-determined auctions may revolutionize compensatory schemes in such industries.

We envision several other avenues for future research: While we have some information on the ex-post level of client satisfaction, it would be interesting for future studies to have detailed information on the effective number of hours that have been worked and the amount of money that has been paid. Also, success (contingent) fees are limited in the Netherlands. Further work, therefore, could be to investigate client preferences in other legal regimes, such as the US.

Laboratory experiments may be valuable to analyze client and lawyer behavior in a setting akin to our theoretical model. On the client side, it may be interesting to learn what drives clients to prefer fixed fees over hourly rates. Next to belief-updating with regard to the number of hours that are required for a case, a natural alternative explanation is (extreme) risk aversion (Rabin, 2000) or a misunderstanding of financial contracts, which is sometimes observed in the market for short-run loans (Agarwal et al., 2009). The question of the potential effect of market power on the pricing structure can also be addressed experimentally.
On the lawyer side, various moral-hazard issues could be studied in the laboratory\textsuperscript{21}: Do lawyers exploit clients who choose hourly rates by overcharging them? Do lawyers exploit clients who choose fixed fees by undertreating them? What is the influence of (anticipated) long-run lawyer/client relationships on fee structures? Laboratory research could also reveal the speed at which the auction unravels to a fixed-fee equilibrium. Our data show that lawyers are weakly significantly more likely to bid fixed fees when they won in the previous auction, which suggests that bidding behavior evolves in the direction of the equilibrium—albeit at a slow pace.

Appendix 1: Proof of Proposition

The proof is by contradiction: Assume that a non-zero mass of lawyer types submits a non-fixed-fee bid: a bid \((p_F, p_H, h)\) where \(p_H > 0\) and \(h_\downarrow > h\). The proof proceeds in two steps: In step 1, we show that bids must be strictly separating in terms of \(h_\downarrow\). In step 2, we show that either the lawyers best respond by pretending to need fewer hours for the case than they actually do (which contradicts the assumption that the bid is an equilibrium bid) or they effectively submit a fixed-fee bid (which contradicts the assumption that the lawyers submit a non-fixed-fee bid).

**Step 1.** Consider a particular bid \((p_F, p_H, h)\) with \(p_H > 0\) and suppose that a non-zero mass of lawyers submits \((p_F, p_H, h)\). The client assigns score 
\[
s(p_F, p_H, h) = p_F + p_H(E\{h_\downarrow| h_\downarrow > h\} - h)P\{h_\downarrow > h\}
\]
to the bid \((p_F, p_H, h)\). Suppose that a lawyer type exists that: (1) submits bid \((p_F, p_H, h)\); and (2) needs \(h < E\{h_\downarrow| h_\downarrow > h\}\) hours for the client’s case. Let \(\tilde{p}_F \equiv p_F + p_H(E\{h_\downarrow| h_\downarrow > h\} - h)P\{h_\downarrow > h\}\). Then this lawyer can obtain the same score by bidding \((\tilde{p}_F, 0, h)\). Notice that for both bids, the probability of winning is the same because they yield the same score. However, the lawyer’s utility upon winning with bid \((p_F, p_H, h)\) is strictly lower than when winning with bid \((\tilde{p}_F, 0, h)\):

\[
U_\downarrow(p_F, p_H, h) = p_F + p_H \max\{0, h - h_\downarrow\} - h c_\downarrow < p_F + p_H(E\{h_\downarrow| h_\downarrow > h\} - h)P\{h_\downarrow > h\} - h c_\downarrow = \tilde{p}_F - h c_\downarrow = U_\downarrow(\tilde{p}_F, 0, h).
\]

Therefore, only lawyer types for whom \(h_\downarrow \geq E\{h_\downarrow| h_\downarrow \geq h\}\) bid \((p_F, p_H, h)\). As a result, if the clients’ beliefs are consistent, it must be the case that only lawyer types that need exactly \(E\{h_\downarrow| h_\downarrow \geq h\}\) hours for the client’s case bid \((p_F, p_H, h)\). As a result, bids must be strictly separating in terms of \(h_\downarrow\).

**Step 2.** Let \(H(p_F, p_H, h)\) be the number of hours that the client believes lawyer \(\uparrow\) will spend on the case based on lawyer \(\downarrow\)’s bid \((p_F, p_H, h)\). By step 1, \(H(p_F, p_H, h)\) is a unique number. The resulting score for bid \((p_F, p_H, h)\) is 
\[
s(p_F, p_H, h) = p_F + p_H \max\{H(p_F, p_H, h) - h, 0\}.
\]
Given a particular score \(s\) that lawyer

\textsuperscript{21} See Dulleck et al. (2011) for an experiment on the role of liability, verifiability, reputation, and competition in a credence-good setting.
\( \uparrow \) offers to the client, lawyer \( \uparrow \) will choose \( p_F, p_H, \) and \( h \) such that her utility is maximized. In other words, she solves
\[
\max_{p_F, p_H, h} U(p_F, p_H, h) = p_F + p_H \max\{h - \frac{1}{\Delta}, 0\} - h \cdot c
\]
s.t. \( s = p_F + p_H \max\{H(p_F, p_H, h) - h, 0\} \)
which is equivalent to solving
\[
\max_{h_{\uparrow}} u(h_{\uparrow}, \tilde{h}_1) \equiv p_H(\tilde{h}_1)(\max\{0, h_{\uparrow} - \frac{1}{\Delta}(\tilde{h}_1)\}) - \max\{0, \frac{1}{\Delta}(\tilde{h}_1)\})
\]
where \( \tilde{h}_1 \) is the type the client deduces from an out-of-equilibrium bid \((p_F(\tilde{h}_1), p_H(\tilde{h}_1), \frac{1}{\Delta}(\tilde{h}_1))\).

In equilibrium, it must be optimal for the client to choose \( \tilde{h}_1 = h_{\uparrow} \). If \( h_{\uparrow} > h \), \( u(h_{\uparrow}, \tilde{h}_1) = p_H(\tilde{h}_1)(h_{\uparrow} - \frac{1}{\Delta}(\tilde{h}_1)) \) for \( h_{\uparrow}, \tilde{h}_1 > h(\tilde{h}_1) \). Note that \( u(h_{\uparrow}, h_{\uparrow}) = 0 \) while \( u(h_{\uparrow}, h_{\uparrow}) = p_H(\tilde{h}_1)(h_{\uparrow} - \frac{1}{\Delta}(\tilde{h}_1)) > 0 \) for \( \tilde{h}_1 < h_{\uparrow} \). Consequently, \( \tilde{h}_1 = h_{\uparrow} \) cannot be optimal because the client strictly prefers to deviate to \( \tilde{h}_1 < h_{\uparrow} \). For \( h_{\uparrow} \leq h \), \( u(h_{\uparrow}, \tilde{h}_1) \) is flat at the point \( h_{\uparrow} = h \) for \( h_{\uparrow}, \tilde{h}_1 \leq h(\tilde{h}_1) \), so that \( \tilde{h}_1 = h_{\uparrow} \) may indeed be optimal. However, in that case the client learns that the lawyer needs less than \( h \) hours, so that the bid is effectively a fixed-fee bid.

We conclude that lawyers effectively offer only fixed-fee bids. Trivially, the lawyer who submits the lowest fixed-fee bid wins the auction.

**Appendix 2: Examples of Dominated Mixed-Fee Bids**

We give two examples of labeling mixed-fee bids as dominated: First, imagine that there are two bids in an auction: bids A and B, respectively. Both are mixed-fee bids. Bid A offers a fixed fee of €2,000 that covers the first 11 h and an hourly fee of €190 from that point on, whereas bid B consists of €1,600 for 10 h and subsequently an hourly fee of €170. Bid A is dominated by bid B because for any number of hours that are dedicated to the case the client pays more under the conditions of Bid A.

Second, consider another auction in which two bids—C and D—are submitted. Bid C consists of €1,500 for the first five hours and after that charges of €170 per hour; bid D offers €1,600 for the first four hours and then €100 per hour. Bid C would be less costly than bid D if the case takes four hours, but not if the case takes seven hours. Therefore, neither C nor D is dominated.

**Appendix 3: Random Sample Procedure of Dutch Law Offices**

The random sample is drawn from a hard copy of the year book of the Dutch Bar Association (“Nederlandse Orde van Advocaten”) of 2005. The reasons to consider this book as a starting point are twofold: First, the XS2J sample consists of cases in the period 2004–2008. As such, 2005 seems like a good proxy for the market for our random sample.
Second, perhaps the year 2006 would have been even better, but the Dutch Bar Association edited this year book only until the year 2005 as a hard copy. Thereafter, information on lawyers has been accessible online (the website’s address is https://www.advocatenorde.nl/). However, retrieval from this online database cannot be done randomly. It contains no list of the entire population of registered lawyers. One can only search on name, location or keyword where for each entered search string—e.g., lawyers that contain the letter “A”—a list of maximum 100 results is returned. Furthermore, the search results contain duplicates; and the returned list is not identical for repetitions of the same search string.

The 2005 book contains an alphabetical list of all individual registered Dutch lawyers and information on all Dutch law offices in that year by court district—about 3,600 in total. From this book, we have generated a random sample that contains roughly 10% of all law offices: 362 observations.

Our randomization procedure is as follows: We took the alphabetical list of individual lawyers as a starting point. As only individual lawyers—and not law offices—are officially registered in the Netherlands this is the relevant unit of observation for producing a random sample. This list contains 69 pages, where each page consists of three columns with about 60 lawyers per column. We let the statistical package Stata randomly generate six different page numbers, and for each of these pages a column number (1, 2, or 3). This gave us a list of 362 lawyers and their corresponding law offices. When we encountered a lawyer who works for a law office that was already in our list, we replaced this lawyer by the first lawyer of the next column, and so forth.

For our generated sample of 362 law offices we retrieved information for their websites as to the fee arrangements that they offer. Note that even though our sample is drawn from the population of lawyers in 2005, we could collect information on their law offices’ pricing schemes only from 2014, as this random sample was generated during a revision of this article. We found 351 offices that still existed in 2014 and that had a website. While some offices changed the composition of lawyers or merged with another office since 2005, only a few went out of business. On the offices’ websites we examined whether information about fee structures is provided. This was the case for 319 offices; the other 32 law offices were opaque with respect to fee structures.

Appendix 4: Single-Equation Estimations

See Tables 8, 9.
Table 8  Logit regression—Win Bid

| Independent variable | Win                  |
|----------------------|----------------------|
| Fixed                | 1.151*** (0.439)     |
| Mixed                | 1.422*** (0.395)     |
| Dominated            | −1.595*** (0.440)    |
| Experience           | 0.848* (0.491)       |
| Distance             | 0.026 (0.458)        |
| Constant             | −2.339 (0.611)       |
| N                    | 283                  |
| Pseudo R²            | 0.150                |
| Chi²                 | 39.93                |
| p value              | 0.000                |

This table shows a logit regression where the dependent variable represents the win or loss of a bid. Robust standard errors, which are clustered at the auction level, are reported in parentheses.

*p < 0.10, **p < 0.05, ***p < 0.01

Table 9  Multinomial regression—Bid types

| Independent variable | Fixed                  | Mixed                  |
|----------------------|------------------------|------------------------|
| Private              | 0.729** (0.334)        | 0.940*** (3.21)        |
| Plaintiff            | −0.732** (0.360)       | −0.318 (0.354)         |
| Non-monetary         | −0.088 (0.322)         | −0.024 (0.308)         |
| Office rental cost   | 0.009** (0.004)        | 0.003 (0.004)          |
| Office size          | 0.001 (0.006)          | −0.003 (0.006)         |
| First time bid       | 0.003 (0.370)          | 0.092 (0.364)          |
| Last bid won         | 0.368 (0.407)          | 0.050 (0.411)          |
| Fixed won prev. auction | 0.719* (0.379)        | 0.076 (0.360)          |
| Frequency fixed      | −0.003 (0.053)         | −0.079 (0.054)         |
| Mixed won prev. auction | 1.009** (0.444)       | 0.719* (0.387)         |
| Frequency mixed      | −0.0644 (0.072)        | 0.126* (0.070)         |
| Auction characteristics |                       |                        |
| Large auction        | −0.064 (0.445)         | 0.057 (0.432)          |
| Constant             | −2.402*** (0.841)      | −1.791** (0.822)       |
| N                    | 283                    |
| Pseudo R²            | 0.0733                 |
| Chi²                 | 43.85                  |
| p value              | 0.008                  |

This table shows a multinomial regression where the bid type fees of lawyers are the dependent variables. Hourly fee rates are the baseline. Numbers in parentheses are standard errors.

*p < 0.10, **p < 0.05, ***p < 0.01
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References

Agarwal, S., Skiba, P. M., & Tobacman, J. (2009). Payday loans and credit cards: New liquidity and credit scoring puzzles? *American Economic Review*, 99, 412–417.

Angrist, J. D., & Pischke, J. (2008). *Mostly harmless econometrics: An empiricist’s companion*. Princeton University Press.

Baarsma, B., & Felső, F. (2005). Het Proces als Domein—Over de Effecten van het Procesmonopolie van de Advocatuur. SEO-report nr. 846.

Bajari, P., & Tadelis, S. (2001). Incentives versus transaction costs: A theory of procurement contracts. *RAND Journal of Economics*, 32, 387–407.

Burdett, K. & Judd, K.L. (1983). Equilibrium price dispersion. *Econometrica*, 955–969.

Dana, J., & Spier, K. (1993). Expertise and contingent fees: The role of asymmetric information in attorney compensation. *Journal of Law, Economics, and Organization*, 9, 349–367.

Dulleck, U., & Kerschbamer, R. (2006). On doctors, mechanics, and computer specialists: The economics of credence goods. *Journal of Economic Literature*, 44, 5–42.

Dulleck, U., Kerschbamer, R., & Sutter, M. (2011). The economics of credence goods: An experiment on the role of liability, verifiability, reputation, and competition. *American Economic Review*, 101(2), 526–55.

Emons, W. (2007). Conditional versus contingent fees. *Oxford Economic Papers*, 89, 89–101.

Engelbrecht-Wiggans, R., Haruvy, E., & Katok, E. (2007). A comparison of buyer-determined and price-based multi-attribute mechanisms. *Marketing Science*, 26(5), 629–641.

Felső, F.A., Onderstal, S., & Seldeslachts, J. (2015). What clients want: Choices between lawyers’ offerings. *DIW Discussion Paper 1460*.

Fugger, N., Katok, E., & Wambach, A. (2016). Collusion in dynamic buyer-determined reverse auctions. *Management Science*, 62(2), 518–533.

Hadfield, G. K. (2000). The price of law: How the market for lawyers distorts the justice system. *Michigan Law Review*, 98, 953–1006.

Kritzer, H. M. (2009). Fee regimes and the cost of civil justice. *Civil Justice Quarterly*, 28, 344–366.

Mas-Colell, A., Whinston, M. D., & Green, J. R. (1995). *Microeconomic theory*. Oxford University Press.

McAfee, R. P., & McMillan, J. (1987). Auctions and bidding. *Journal of Economic Literature*, 25, 699–738.

Meijer, G., & Sjoerd, Y. (2002). Influence of the code civil in the Netherlands. *European Journal of Law and Economics*, 14, 227–236.

Rabin, M. (2000). Risk aversion and expected-utility theory: A calibration theorem. *Econometrica*, 68, 1281–1292.
Rhode, D. L. (1985). Ethical perspectives on legal practice. *Stanford Law Review, 37*, 589–635.

Rubinfeld, D., & Scotchmer, S. (1993). Contingent fees for attorneys: An economic analysis. *RAND Journal of Economics, 24*, 343–356.

Smith, J. K., & Cox, S. R. (1985). A contractual solution to bilateral opportunism. *The Journal of Legal Studies, 14*, 167–183.

The Economist (2011). How to Curb Your Legal Bills. May 5.

Van Velthoven, B. (2007). *Civiele Rechtspraak in Eerste Aanleg. Een Eerste Stap op Weg naar Kwantificering van de Maatschappelijke Betekenis van de Rechtspraak*. Boom Juridische Uitgevers.

Winston, C., Crandall, R. W., & Maheshri, V. (2011). *First thing we do*. Brookings Institution Press.

Zellner, A., & Theil, H. (1962). Three-stage least squares: Simultaneous estimation of simultaneous equations. *Econometrica, 30*, 54–78.