



# **In the shadow of the Dutch courts**

**Individual and social costs and benefits of litigation**

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### **Short abstract**

This paper starts with the description of a simple formal economic model of individual decision making of firms and individuals regarding the making of economic transactions, breaches of contract and litigations. Decisions in all phases are based on individual calculations of expected costs and benefits of possible choices.

The model is applied to fit empirical data of commercial court cases with financial stakes in the Netherlands in 2009. This enables us to simulate and estimate the consequences of different (mainly) financial policy options, e.g. the level of court fees and legal aid tariffs, not only on litigation, but also on social costs and benefits of legal aid and the court system. The paper presents the results of the base line model. Further analyses give an impression of the sensitivity of the results for the assumptions made in the model.

## **Introduction**

In 2014 the Dutch Council of the Judiciary published a Research Memorandum about individual and social costs and benefits of litigation in Dutch (Van Tulder 2014). This paper presents the main results of this study. It starts with the description of a simple formal economic model of individual decision making regarding economic transaction, breaches of contract and litigations. Actors take all these decisions in a framework of comparing the expected costs and benefits of possible choices. The aggregate of these individual decisions determines the social costs and benefits of the judicial infrastructure. So the divergence between individual and social motives and costs stressed by Shavell (1997, 2003) is explicitly modelled here.

The model is applied to fit empirical data of commercial court cases with financial stakes in the Netherlands in 2009. This enables us to simulate and estimate the consequences of different (mainly) financial policy options, e.g. the level of court fees and legal aid tariffs, on litigation and on social costs and benefits of legal aid and the court system. Further analysis gives an impression of the sensitivity of the results for the assumptions made in the model.

## **The decisions of individual firms or persons**

We start with a sketch of the model of decision making by individual persons and firms regarding entering into transactions (contracts), breaches of contract (including doing harm) and litigation. See figure 1.

Below we describe the relations in the model in more detail. In society a lot of transactions take place. A transaction is defined here as an activity in society with consequences for wealth and property rights. So both commercial transactions, and transactions inflicting injuries upon others are included here.

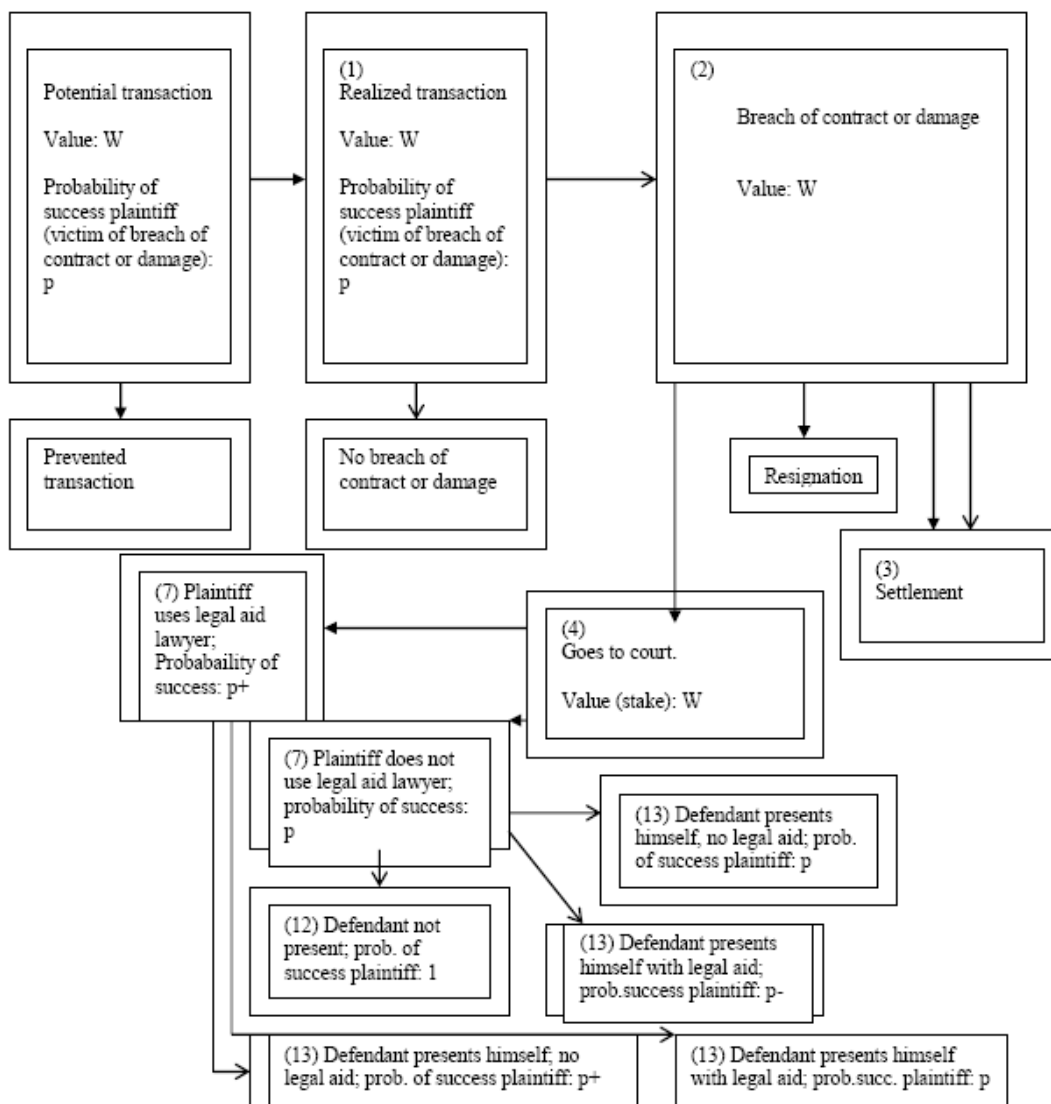
These types of transactions take place 'in the shadow of the law'. 'The activity levels and extent of precaution chosen by those who are potential victims may also effect the frequency of harm. As will be true at each stage of the litigation 'game', the 'rational decision of potential injurers and victims will be dependent on their expectations as to the stream of benefits and costs associated with their activity and precaution choices. These benefit and costs streams, are of course, related directly to the decisions that are likely to be made in each of the further stages of the litigation game.' (Kessler en Rubinfeld 2007, p. 374) Our model aims to incorporate a simple form of this line of thought.

In the decision making about whether or not to engage into an transaction parties consider the risk that the transaction will lead to a breach of contract in the broad sense, including harm or injury. These decisions are taken given the law and the legal system, which determine the legal certainty playing a role in the model. Besides the model enables us to sketch the consequences of changes in legal certainty. With the potential transaction a level of care of both parties is given. This level of care influences the probability of success when going to court in case of a breach of contract.

A party engages in a transaction if and only if he thinks, in case of a breach of contract of the other, to have a credible threat to litigate. In other words: the expected benefits of going to court are higher than the expected costs. If this is not the cases the party will

decide not to engage in the transaction in that way. He can decide not to engage in the transaction at all, or to change his transactions policies to diminish the probability of such a contract breach by the other party.

Figure 1 Micro relations model



A (short term) calculating actor will breach contract, if and only if he expects that the other party will not litigate him or that he expects net benefits of a law suit.

The economics of law literature states: 'The frequency of harm will generally be influenced by the choices that potential injurers make about the level of activity in which they engage, and in precautions that they take when engaging in these activities.' (Kessler en Rubinfeld 2007, p. 374). And the lower the costs and the greater the effects of taking precautions, less frequent harm will be done (cfm. Shavell 1982).

This is the short term calculation of the actor. The sociology of law literature stresses the relevance of long term social relations and the value of trust in these relations. So part of transactions takes place in this context: the breach of contract may be beneficial in the short run, but not in the long run, because of the loss of trust by the other party. Thus with a part of transactions no breach of contract will place, even if this would be beneficial to a party in a short term calculation.

How are the expected net benefits of the plaintiff in case of litigation determined? See Equation 1:

$$EB_{pij} = E_{ppij}(W - (C_{pi} - CC_{pi})) - (1 - E_{ppij})(C_{pi} + CC_{dj})$$

with

W - value of claim at stake

$E_{ppij}$  - by plaintiff expected probability of success in case of litigation, with plaintiff litigating without lawyer ( $i=1$ ) and with lawyer ( $i=2$ ) and defendant non presenting himself ( $j=0$ ), presenting himself without lawyer ( $j=1$ ) and with lawyer ( $j=2$ )

$EB_{pij}$  - by plaintiff expected net benefit of plaintiff with litigation, with plaintiff litigating without lawyer ( $i=1$ ) and with lawyer ( $i=2$ ) and defendant non presenting himself ( $j=0$ ), presenting himself without lawyer ( $j=1$ ) and with lawyer ( $j=2$ )

$C_{pi}$  - litigation costs paid by plaintiff in case of litigating without lawyer ( $i=1$ ) and with lawyer ( $i=2$ )

$C_{dj}$  - litigation costs paid by defendant in case of defendant non presenting himself ( $j=0$ ), presenting himself without lawyer ( $j=1$ ) and with lawyer ( $j=2$ )

$CC_{pi}$  - litigation costs winning plaintiff compensated by defendant

$CC_{dj}$  - litigation costs winning defendant compensated by plaintiff

The expected net loss of the defendant in case of litigation is given by Equation 2:

$$EL_{dij} = E_{pdij}(W + (CC_{pi} + C_{dj})) - (1 - E_{pdij})(C_{dj} - CC_{dj})$$

With:

W - value of claim at stake

$E_{pdij}$  - by defendant expected probability of success plaintiff in case of litigation, with plaintiff litigating without lawyer ( $i=1$ ) and with lawyer ( $i=2$ ) and defendant non presenting himself ( $j=0$ ), presenting himself without lawyer ( $j=1$ ) and with lawyer ( $j=2$ )

$EL_{dij}$  - by defendant expected net loss with litigation, with plaintiff litigating without lawyer ( $i=1$ ) and with lawyer ( $i=2$ ) and defendant non presenting himself ( $j=0$ ), presenting himself without lawyer ( $j=1$ ) and with lawyer ( $j=2$ )

$C_{pi}$  - litigation costs paid by plaintiff in case of litigating without lawyer ( $i=1$ ) and with lawyer ( $i=2$ )

Cdj – litigation costs paid by defendant in case of defendant non presenting himself (j=0), presenting himself without lawyer (j=1) and with lawyer (j=2)

CCpi – litigation costs winning plaintiff compensated by defendant

CCdj – litigation costs winning defendant compensated by plaintiff

Some additional remarks are in order here:

- a) The individual values of potential transactions  $W$  and the real probability of winning in court in case of a breach of contract/damage are brought in by Monte Carlo simulation representing distributions at aggregate level and discussed later.
- b) The attitude towards risk. Are the actors risk neutral or risk averse? In the base line model sketched above costs and benefits are weighted equally. In a sensitivity analysis risk aversion is assumed by attributing more weight to the costs in Equations 1 and 2.
- c) The decision to use or not to use assistance of a lawyer in the law suit. In some cases this is compulsory, in other cases it is optional. The costs of the legal aid of a lawyer depend on the actions he takes in the cases. Some policy norms in that respect, relating normative lawyer costs to the value of the claim, are used for an estimate. Persons with low incomes can get a discount on lawyer fees, which are then partly publicly financed.
- d) The court fee the parties in a court case have to pay. The Dutch institutions in this sphere are incorporated in the model. The court fee tariff depends on the value of the claim at stake. With smaller financial stakes only the plaintiff has to pay. Litigants with low income get a discount.
- e) The other costs parties have to make to present themselves in court. Our knowledge about these costs in practice is very limited. A fixed small threshold amount of 40 Euros is applied in the empirical application of the model.
- f) In Dutch judicial practice in commercial court cases the losing party is convicted to pay a part of the court costs (court fees, costs of legal aid) of the winning party. Also the judge in his or her verdict usually states that the losing party has to pay standardized debt costs to the winning party. These practices are incorporated in the model.

The effect of legal assistance by a lawyer merits some more remarks. The use of legal assistance in the law suit may influence the probability of success of the parties. We assume that the relative effect is larger the lower the probability of success without legal aid for the plaintiff. When both parties use legal aid, no effect on the probability of winning is assumed. See Equation 3:

$p_{ij}$  - (real) probability of success plaintiff in case of litigation, with plaintiff litigating without lawyer ( $i=1$ ) and with lawyer ( $i=2$ ) and defendant non presenting himself ( $j=0$ ), presenting himself without lawyer ( $j=1$ ) and with lawyer ( $j=2$ )

$$p_{21} = p_{11}(1 + \alpha p_{11}(1 - p_{11}))$$

$$p_{12} = p_{11}(1 - \alpha p_{11}(1 - p_{11}))$$

$$p_{22} = p_{11}$$

Because in Dutch practice defendants not presenting their case, are always losers (Eshuis 2003, p.27):

$$p_{10} = p_{20} = 1$$

A sensitivity analyses of some alternative assumptions in this respect can be found in the report.

This about the real probability of winning the case. But parties may be too optimistic, so overestimate their probability of winning in court. Research (Malsch 1990) showed that Dutch lawyers overestimated the probability of winning with approx. 8 to 10 per cent. We return to this aspect later when fitting the model. Besides there are individual (randomized) differences in estimations between parties, which may cause over- or underestimation of the probability of winning/loosing.

The probability of enforcement of a judicial verdict is also relevant. If the judge convicts the defendant, this does not automatically mean that the plaintiff can collect the claimed amount fully. Research (Eshuis 2009) showed that in the Netherlands a considerable number of convictions (7 per cent in litigation cases with high claims to 42 per cent in small non disputed debt collection claims) could not be enforced.

We assume two types of actors contemplating a potential transaction: those who will cooperate with the enforcement of a claim after being convicted by the court and those who will not. Both types of actors incorporate these consequences in their cost benefit estimation in deciding about transactions and breaches of contract/inflicting damages. The other party in a potential conflict does not know which type of actor the other party is. He/she can only correct the estimated benefits of winning in court with an overall percentage related to enforcement problems. The related consequences for the empirical model will be discussed later.

The defendant and his possible lawyer do not present themselves in court, if and only if the expected loss in case of their presence is more than in case of absence. In case of absence the defendant does not have to pay costs for legal assistance and for presenting his case in court.

A breach of contract can be contested in a law suit, but can also result into a settlement. Empirical research shows the vast majority of contested transactions does not lead to a law suit, but to a settlement or a decision to let the case rest (Galanter and Cahill 1994). Two third of Dutch debt collector cases are settled. Besides there are a number of Alternative Dispute Resolution (ADR) facilities (e.g. complaint commissions for consumers) which enable to settle many quarrels about deficient goods et cetera without going to the court.

According to the model a settlement is reached, if the net benefit the plaintiff expects when going to court is lower than the expected net loss the defendant expects in a court case. The settlement amount lies in between these expectations and cannot be higher than the claimed amount, excluding the settlement costs.

In those cases the plaintiff and the defendant can reach a settlement if and only if the expected net benefit of going to court of the plaintiff is less than the expected loss of the defendant in court. Then the settlement amount is approached by (Equation 4):



$$S = (EB_p + EL_d - C_s) / 2$$

With:

EB<sub>p</sub> – by plaintiff expected net benefit with litigation

EL<sub>d</sub> – by defendant expected net loss with litigation

C<sub>s</sub> – costs to reach a settlement (of both parties together)

The settlement amount is assumed to be never larger than the claim at stake.

This condition for a settlement is common in literature (Kobayashi en Parker 1999, p. 6; Daughety 1999). The higher the costs of litigation, the higher the probability of a settlement. When parties have too optimistic expectations about their probability of winning a court case, the lower this probability. The conclusion in literature is that settlements are most frequently found in cases with relatively minor financial interests. When settlements are not reached, this is mostly seen as a consequence of a lack of information to the parties involved (Daughety 1999, p. 96). The effects of possible strategic bluffing behavior in negotiations is not incorporated into the model. In the sociology of law literature settlements are often seen as an investment in long term relations. This may lead to a decision to settle, even in cases where the short run calculation suggests otherwise.

When no settlement is reached the victim will decide to go to court, if and only if he/she expects positive net benefit of such an action. The plaintiff decides which action results in the maximum of expected net benefits: presenting himself without (if possible) or with a lawyer. For the sake of simplicity this comparison is made under the assumption that the defendant does not have legal aid of a lawyer.

After the plaintiff has decided to go to court without or with legal aid, the defendant decides which action results in the minimum expected net loss: not presenting himself, presenting himself without lawyer (if that is possible) or with lawyer.

### **Individual decisions aggregated and social costs**

Thus far the model describes the decision making of individual persons or firms, so at micro level. Now we will 'transfer' these results to the macro level of social costs. At first only formally. The next Paragraph describes the process of fitting the model to data for the Netherlands.

Figure 2 sketches the model at macro level. The aggregated model starts with distribution of potential transactions of value  $W$  and of the probability of success  $p_{11}$  for the plaintiff in case the transaction is realized and a party 'decides' to breach the contract or to inflict damage. With each 'drawing' of values of  $W$  and  $p$  individual actors decide according to the decision rules described in the last Paragraph. So a part of potential transactions is not realized, but 'prevented' by uncertainty about the possibilities of enforcing contracts in courts or to get compensation for inflicted damages. In a part of transactions a breach of contract takes place or a damage is inflicted. Conflicts in these cases may lead to settlements or litigation, so to commercial cases in the courts.



Aggregating the results gives the results at the level of society. The value of the next components is derived in the model by aggregating results at micro level.

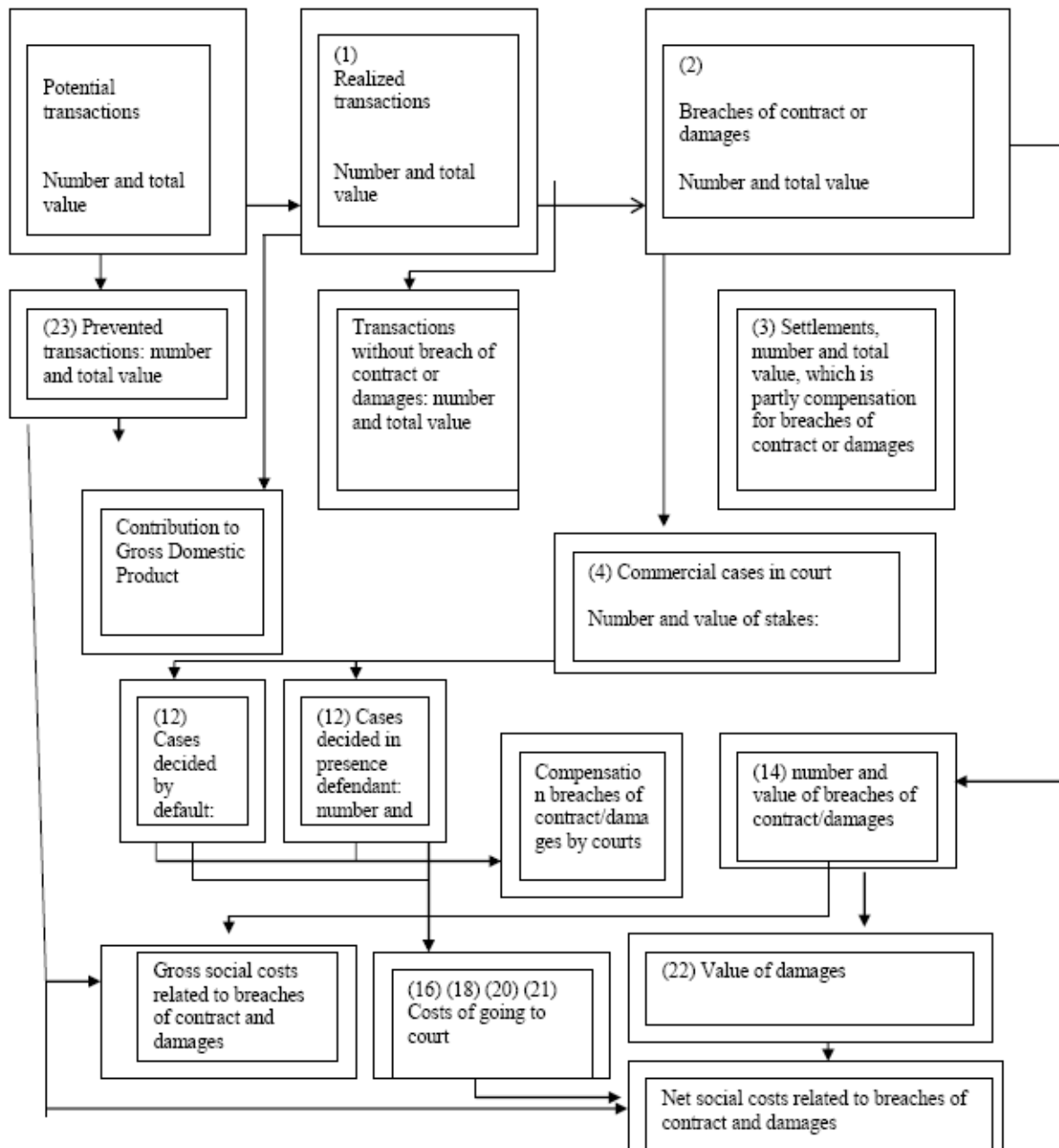
Important components in this respect are:

- + The total value of breach of contracts/damages inflicted
- Of which compensated by settlements or successfully executed judicial verdicts
- = total non-compensated value of breaches of contracts and damages

The social of costs due to the consequences of breaches and inflicted damages are:

- + the costs of the courts, publicly or (via court fees) privately financed
- + the costs of legal assistance to litigating parties, privately or publicly (via subsidies) financed
- + other costs for the parties to present themselves in court (e.g. travelling expenses)
- + damages inflicted
- + the value of transactions which are 'prevented' (do not take place) because of the risk of breach of contract or damages
- = social costs of breaches of contracts or damages

Figure 2 Macro relations model



### Fitting the model to data of the Netherlands

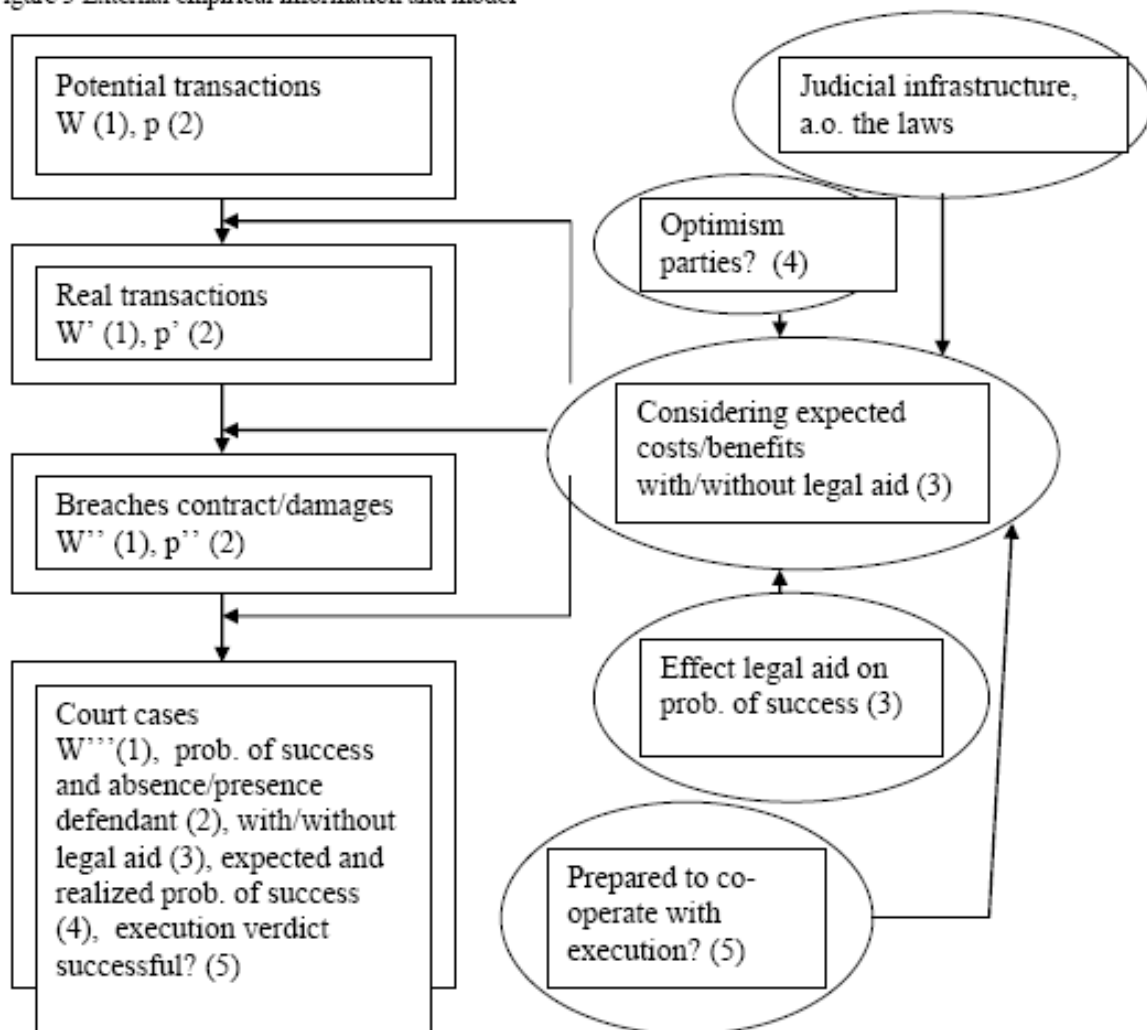
The main pillar of the model is a law and economics approach: parties make cost benefit calculations when deciding about entering into transactions, breaches of contract and litigation. As already noted an important basis of the model is the judicial infrastructure, i.e. the institutions in het area of law and litigation.

Besides to complete the model some external empirical information is used. See Figure 3. In the figure a number of variables or parameters used in the model are

numbered. With the same number is marked which results of the model is determined by the relating variable or parameter.

Figure 3 External empirical information and model

Figure 3 External empirical information and model



The variables or parameters involved are

1. The financial value of the (potential) transaction and possibly related consequences ( $W$ ,  $W'$ ,  $W''$  en  $W'''$ ). This is determined in a Monte-Carlo simulation by drawing numbers out of a random distribution. The resulting distribution of commercial court cases with financial stakes ( $W'''$ ) is equal to the known distribution of these (first instance) cases handled by the Dutch courts in the year 2009.
2. The probability of success of the potential plaintiff ( $p$ ) (without legal assistance by a lawyer) with potential transactions and possibly related consequences ( $p$ ,  $p'$ ,  $p''$ ). A Monte Carlo simulation of  $p$  is used by drawings from a random distribution. The resulting percentage of court cases in which the defendant is absent equals the known percentage of these cases in 2009 for various classes of financial stakes.
3. The effect of using legal assistance by a lawyer on the probability of success in the court case. The model is simulated with various alternative values of the parameter involved in the model ( $\alpha$  in Equation 3). The value is chosen by which the known percentage of the litigating parties which use voluntary legal assistance in 2009 is most closely approximated.
4. Simulation with the model shows that the assumption that both parties do not structurally overestimate or underestimate their probability of success is consistent with empirical research. By selection effects (cases in which the plaintiff has a lower estimated probability are less likely to go to court) this is consistent with the finding of Malsch (1990) that lawyers in criminal or civil court cases overestimate their probability of winning the cases with 8 to 10 per cent.
5. With 0.6 per cent of the possible transactions a party is involved which intends in advance not to obey to an execution of a verdict of the judge in his disadvantage. By Monte Carlo simulation we conclude that this percentage leads to a percentage of successful executions of 75. This is roughly according to the empirical estimates of Eshuis (2009). The big difference is the result of selection effects. Those who do not intend to obey a judicial order are more likely to breach a contract or doing harm to the other party.

These are external empirical results which are used to complete the model.

### **Output of the model simulations**

We can describe the output of the model in various ways. We start with the output of the base line model. What are the ratios between the values of transactions, breaches of contract/damages and court cases found in the model? See Figure 4.

*Table 1 Estimates of the ratios of total transactions, breaches of contract/damages, settlements and court cases*

<b>Value of transactions in Euros</b>	<b>court cases to breaches of contract c.a.</b>	<b>breaches of contract c.a. to transactions</b>	<b>settlements to breaches of contract c.a.</b>
> 50000	30%	83%	70%
25000-50000	17%	68%	82%
10000-25000	18%	58%	82%
5000-10000	23%	41%	78%
2500-5000	32%	22%	68%
1000-2500	22%	21%	77%
500-1000	19%	24%	81%
250-500	15%	9%	85%
<250	35%	2%	66%

The part of (the value of) transactions in which a breach of contract or damage takes place, grows with the financial stakes of the transactions, up to 80 per cent in large transactions. As stated earlier, transactions based on mutual trust are not incorporated here.

The part of the (value of) breaches of contract or damages with which a settlement is reached, does not show such a clear relationship with the financial stakes at hand. The percentage varies between 70 and 80 per cent, so settlement is reached in a majority of cases. The other part results in court cases.

There is something more to say about the total value of transactions, breaches of contract and financial stakes in Dutch commercial cases. The latter is approx. 5,3 Billion euros in 2009. The role of a few cases with high financial stakes dominates the total amount, which fluctuates somewhat over the years. According to the base line model this 5,3 Billion resulted from breaches of contract and damages of approx. 19 Billion, which resulted from transactions worth 33 Billion. This is very low compared with the Dutch GDP (572 Billion in 2009), while the total value of transactions is still much higher. Our explanation is threefold. In the first place, as stated above, many transactions are based on mutual trust and long term calculations and will go on without breach of contract or damage. In the second place many problems are settled without going to the court because of ADR facilities. In the third place: as we will see later, when risk aversion instead of risk neutrality is assumed in the model, this estimated financial value of transactions will increase considerably.

Now for something completely different: the probability the plaintiff winning the court case. We have no direct empirical knowledge about this, so it is really output of the model simulation. See Figure 5.

Table 2 Mean probability of success for plaintiff, commercial cases, first instance, 2009

Value of transactions in Euros	excl. defendant not presenting himself	incl. defendant not presenting himself
> 50000	57%	70%
25000-50000	57%	78%
10000-25000	57%	78%
5000-10000	49%	77%
2500-5000	41%	80%
1000-2500	52%	92%
500-1000	68%	96%
250-500	71%	97%
<250	70%	100%

When cases decided in absence or in presence of the defendant are taken together, the mean probability of success for the plaintiff diminishes from nearly 100 per cent in cases with a small financial stake to approx. 70 per cent in cases with large financial stakes. When we limit ourselves to cases decided in presence of the defendant the probability of success is clearly lower. In cases with higher financial stakes the probability is hardly more than 50 per cent. The probability is remarkably low in cases with a financial stake between 2,500 and 5,000 euros. In this segment litigation is possible without legal assistance of a lawyer. That was in 2009 in the Netherlands different in commercial cases with financial stakes above 5,000 euro.

Table 1 presents the results of the base line model simulation the 2009 situation (first column) and the results of the simulation of 6 changes in the judicial infrastructure:

- 1) Doubling of all court fees, so a rise of 100 percent of these fees.
- 2) An abolition of all court fees.
- 3) Doubling of all tariffs of legal aid of lawyers, so a rise of 100 percent of these fees.
- 4) Abolition of the usual ruling that the losing party pays the litigation costs of the other party
- 5) Introduction of 'no cure no pay' in the legal aid tariffs.
- 6) The fact that execution of verdicts of the courts is not always successful diminishes the legal certainty. What if successful execution would be guaranteed?

Table 3 Effects of various changes in judicial infrastructure regarding commercial cases: values in Millions of euros, unless stated otherwise<sup>1</sup>

	Starting situation 2009	Court fees +100%	Court fees abolished	Doubling of tariffs for legal aid	Loser does not pay other lit.costs	'No cure no pay'	Execution always successful
Number of court cases (x 1000)	545	-44%	129%	-1%	1%	4%	37%
Related value (Billions)	5,3	-10%	15%	-22%	-7%	-1%	120%
Number parties w. legal aid (x 1000)	91	-26%	57%	-58%	-34%	7%	131%
Related value (Billions)	8,6	-7%	7%	-27%	-8%	0%	133%
Prevented transactions (% GDP)	0.00%	0.12%	-0.12%	0.15%	0.01%	-0.10%	-0.07%
Prevented transactions (value)	0	680	-680	870	60	-580	-390
Costs of courts	146	-61	257	-40	-11	22	172
Total court fees	109	30	-109	-20	-6	2	86
Costs of legal aid.	241	-44	66	-6	-59	0	291
- fully privately funded	193	-33	42	-23	-49	-19	236
- subsidized	44	-9	21	17	-8	18	50
- own contributions	5	-2	3	1	-1	2	5
Additional costs	163	-59	159	-21	-7	5	127
Total costs of litigation	550	-164	482	-67	-77	27	590
Value of damages	740	-40	40	-40	10	40	10
Total social costs	1290	480	-160	760	-10	-520	210
Value of breaches of contract/ damages	18530	-890	1030	-1120	250	960	240
- compensated by settlement	6770	-80	0	190	360	450	-3480
- compensated by verdict judge	3350	-340	460	-630	-260	-180	4220
Not compensated value of breaches of contract/damages	8410	-470	580	-670	160	690	-500

The starting situation 2009 is given by the numerical column at the left: the not compensated value of breaches of contract and damages is more than 8 Billion. The total value of social costs as defined here – including costs of courts and legal aid and the value of damages but excluding the on compensated value of breaches of contract and damages - is nearly 1,3 Billion.

<sup>1</sup> From starting point 2009.



Doubling court fees has according to the base line model a considerable effect on the number of court cases (-44%), which indicates a price elasticity of approx. -0,4. We have to realize that in the commercial cases analyzed here there is often a clear financial stake, and often the plaintiffs are companies which are repeat players and used to cost benefit calculations. The influence of possible insurances of legal costs – not incorporated in the model – is probably small in these sphere. Note that the effect on the total value of stakes in court cases diminishes only with 10 per cent. Clearly the small claim cases are the most sensitive to a rise in court fees. The effect on the use of (litigation related) legal aid is smaller, but yet considerable (-26% in numbers and -7% in value at stake). The total abolition of court fess has an considerable effect in the other direction.

Doubling legal aid tariffs has hardly any effect on the number of court cases (-1%), but more on the value at stake with them (-22%). Here the cases with higher financial stakes are more sensitive. That is because of the compulsory use of legal aid in cases with higher stakes. In 2009 (base year) this related to commercial cases with stakes higher than 5,000 euros. And the effects on the use of litigation related legal aid are considerable: -58 per cent in numbers and -27 per cent in value of stakes.

In the simulations with doubling of court fees or tariffs for legal aid the total costs of litigation diminish because of these effects. The social costs rise, because of the prevention of a number of relatively risky transactions which do no longer take place. The compensated and non-compensated value of breaches of contract and damages gets less as a consequence.

Both the abolition of the payment by the loser of the litigation costs of the other party and a 'no cure no pay'-system with legal aid will stimulate the litigation somewhat in court cases with smaller financial stakes, whereas the use of legal aid diminishes strongly in the first simulation and increases in the second. 'No cure no pay' will lead to extra transactions and diminishes social costs. But the uncompensated value of breaches of contract and damages increases with both measures, and strongly so with 'no cure no pay'.

The last simulation, execution of the verdict of the judge is always successful, has great consequences for the number of court cases and the use of legal aid, so the costs of litigation rise strongly. The favorable effect in terms of less foregone transactions cannot compensate for this, so the social costs rise. The non-compensated value of breaches of contract and damages decreases considerably.

Alternative models



Table 4 gives an overview of the change in important elements of model output when some alternative assumptions are made. The alternatives are:

- 1) The number and value of transactions is fixed and does not depend on possible consequences in terms of breaches of contract/damages and litigation.
- 2) Both transactions and breaches in contract/damages are fixed (in number and value) and not dependent on possible litigation.
- 3) Both parties are not risk neutral, but risk averse in their cost benefit calculations. A possible loss weights 25 per cent more than a possible win of the same amount.
- 4) Parties are both structurally 10 per cent points too optimistic about their probability of success.
- 5) The use of legal aid of a lawyer has an effect on the probability of success twice that of the base line model. Besides 50 percent of litigating parties are not capable to litigate without the use of legal aid by a lawyer.

We saw already the results of the base line model. Regarding the price elasticities of the number of court cases and the use of legal aid we conclude that the effects in the alternative models are mostly comparable to that in the base line model. With the exception with the model with risk aversion: the rather high price elasticity of the number of court cases is only half of that in the base line model. The larger the presumed effects of lawyers on litigation and the outcome of it, the larger are the effects of the tariffs for legal aid on the number of court cases.

Table 4 Results base line model and models with some alternative hypotheses

	Base line model	Trans- actions fixed	Breaches of contract fixed	Risk aversion of parties	Parties too optimist	More effect lawyer
<i>billions of euros</i>						
Value of transactions	33	28	34	173	11	28
Value of breaches of contracts/damages	19	18	21	53	8	13
Value of settlements (outside the courts)	13	13	15	46	3	8
Value of (stakes in) court cases	5,3	4,7	5,4	7,9	4,8	5,3
Value of (stakes in) for parties with legal assistance	8,6	8,0	9,0	14,9	7,9	9,3
<i>millions of euros</i>						
Costs of litigation	550	629	586	586	543	657
Social costs	1290	1330	1420	2720	850	1180
Non compensated value of breaches of contracts and damages	8410	8210	10060	32290	2980	5710
<i>Effect of a 100 per cent rise in court fees<sup>2</sup></i>						
Court cases						
- number (%0	-44%	-45%	-46%	-20%	-44%	-41%
- value of stakes (%)	-10%	-9%	-9%	-2%	-7%	-8%
Legal assistance lawyer						
- numberl (%)	-26%	-31%	-34%	-30%	-21%	-33%
- value of stakes (%)	-7%	-6%	-6%	-2%	-5%	-6%
<i>Effect of a 100 per cent rise of tariffs legal assistancea</i>						
Court cases						
- number (%)	-1%	0%	-2%	-1%	-2%	-14%
- value of stakes (%)	-22%	-19%	-19%	-12%	-13%	-20%
Legal assistance						
- number (%)	-58%	-62%	-62%	-42%	-57%	-56%
- value of stakes (%)	-27%	-24%	-23%	-13%	-16%	-22%

We see more differences in the estimates of the total value of transactions and breaches of contract/damages in these alternative models. The model with risk aversion is again the most striking here. The related value of transactions is a much larger portion of GDP here than in the base line model. When parties are too optimistic it is the other way round. The part of the model about transactions and breaches of contract/damages relies heavily on theoretical assumptions and is the least empirically funded part. So it is not surprising that the results of this part are most sensitive to assumptions made.

### Optimum level of court fees?

An interesting question is: which level of court fees minimizes the social costs? Figure 6 sketches the results of the base line model.

<sup>2</sup> Level in 2009 is starting point.

Table 5 Social costs (Millions of euros) related to level of court fee (euro), compared to level 2012<sup>3</sup>

	0%	20%	40%	60%	80%	100%	120%	140%	160%	180%
<b>damages</b>	1.075	1.000	1.075	1.200	1.250	1.380	1.575	1.700	1.875	2.000
<b>costs of litigation</b>	1.875	1.825	1.875	1.900	2.070	2.125	2.325	2.380	2.575	2.625
<b>prevented transactions</b>	0	250	450	620	750	950	1.125	1.325	1.500	1.630

The optimum can be found with a level of court fees of approx. 20 per cent of the level for commercial cases in the Netherlands in 2012. An important component is the rise of the value of foregone transactions with higher levels of court fees.

Figure 7 gives the results in case the number and value of transactions and breaches of contract is seen as fixed (see second alternative in Table 4).

Table 6 Transactions and breaches of contracts fixed: social costs (Millions of euros; vertical axis) related to level of court fee (euro; horizontal axis), compared to level 2012

	20%	40%	60%	80%	100%	120%	140%	160%	180%
<b>costs of litigation</b>	1.1125	1.0925	1.0875	1.0825	1.0820	1.0820	1.0825	1.0870	1.0880
<b>non-compensated value of breaches of contract/damages</b>	1.0325	1.0325	1.0325	1.0370	1.0375	1.0400	1.0450	1.0500	1.0625

Now the number and value of foregone transactions does not play a role. The optimum level of court fees is in this model approximately equal to the actual level.

Figure 8 shows a third result, related to the third alternative in Table 4: the parties are risk averse.

Table 7 Risk aversion: social costs (Millions of euros; vertical axis) related to level of court fee (euro; horizontal axis), compared to level 201<sup>4</sup>

	0%	20%	40%	60%	80%	100%	120%	140%	160%	180%
<b>damages</b>	3.750	4.750	5.500	6.250	7.250	8.200	9.200	10.000	11.200	12.000
<b>costs of litigation</b>	1.500	2.250	3.000	4.000	5.000	6.000	7.000	8.000	9.000	1.0000
<b>prevented transactions</b>	0	1.000	2.500	3.500	4.500	5.500	6.550	7.500	8.500	9.500

In this model the optimal level is clearly no court fee at all. This is the result of the sensitivity of the value of transactions to the court fee level. Table 4 showed that the value of relevant transactions is relatively large in this model.

<sup>3</sup> Value of prevented transactions compared to 0% level of court fees.

<sup>4</sup> Value of prevented transactions compared to 0% level of court fees.



## **Conclusion**

A simple formal model, describing the link between (the number and value of) transactions, breaches of contract/damages and court cases is formulated. The central assumption is that actors in society or parties in litigation decide on the base of expected costs and benefits of their actions. The model is applied to data on Dutch commercial cases in 2009 and enriched with institutional data to formulate the base line model.

As the paper illustrates, the model sketches possible consequences of various policy measures regarding the judicial infrastructure and the individual and social costs related to breaches of contract and litigation. But various assumptions in the model deserve more scrutiny and empirical research: especially the part related to transactions and breaches of contracts/damages relies heavily on theoretical assumptions, which are not yet tested empirically. Sensitivity analyses shows in particular the importance of the attitude towards risk of the parties involved.

Important aspects to reconsider are the valuation of foregone transactions and the definition of social costs. Further extensions of the model could encompass: possible insurance against legal costs, a more explicit role of ADR facilities as substitutes of courts, application to cases with non-financial stakes and the role of appeal courts.

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