

**BARGAINING WITHIN THE SHADOW OF FAIRNESS:
ECONOMIC ANALYSIS OF ARTICLE 4.109
OF THE PRINCIPLES OF EUROPEAN CONTRACT LAW**

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ABSTRACT

The problem of unequal bargaining power has been widely analyzed within the philosophical and economic literature. In this article I would like to concentrate on the issue of “excessive benefit or grossly unfair advantage” as envisaged in Article 4.109 (ex art. 6.109) of *The Principles of European Contract Law* (PECL). The normative significance of PECL indicates that the codification may be applied by parties as a supranational system of general principles of law or international commercial law (*lex mercatoria*). The economic analysis of European contract law will be divided in two parts. The first part will include the traditional economic analysis of contract law under an unrealistic assumption of zero transaction costs. It could be argued that even then contract failure may occur. This part concerns the so-called “contract failure”. The second will be focused primarily on contracts made in a positive transaction cost world, where the presence of transaction costs leads to a “market failure”. Both parts pertain to the regulation of contracts by courts within a framework of judicial governance. The main instrument of such judicial governance seems to be the concept of a hypothetical bargain or hypothetical contract. The most appropriate tool to be implemented in these cases seems to be game theory. Whether the benefit is excessive or not, it should be compared with the hypothetical division of surplus from the exchange stemming from the face-to-face ideal bargaining process. Thus the problem of a “market failure” may be analyzed from the perspective of a potential solution to the bargaining problem. In conclusion I would like to address the question of whether and under what conditions it is possible to construct any plausible and generally accepted criteria of fairness in order to restore contractual equivalence in case of gross inadequacy in bargaining power.

Key words: Coase theorem, judicial governance, reciprocity, economic theory of contracts, Nash bargaining solution.

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**BARGAINING WITHIN THE SHADOW OF FAIRNESS:
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1. Introduction

Within this article a regulatory framework of unequal bargaining power in *The Principles of European Contract Law* (PECL) is to be analyzed from the perspective of law and economics. The regulation has been shaped by the concept of “excessive benefit or grossly unfair advantage” as envisaged in Article 4.109 (ex art. 6.109) of *The Principles of European Contract Law* (PECL). The problem of reciprocity in contracts is often discussed on the level of theory of contract and has been widely analyzed within the philosophical and economic literature. According to the subjective theory, parties enter into contractual relations because it seems to be subjectively profitable. The terms of contract are negotiated and the contract is binding because of the fact that both parties voluntarily agreed. Therefore, consent seems to be the source of a binding force of contract (Barnett 1986). This and similar theories assume that freedom of contract stems from the principle of individual autonomy. A contract may be validated only if the consent was vitiated, but there was a typical procedural problem with the process of formation of contract. Subjective theory is partly based on economic reasoning: from the economic perspective, if a party voluntarily enters into a contract, it seems that she will comply with its preferences. Neo-classical theory of contracts points out that the contract which maximizes utility of at least one party, the other being constant, is a Pareto efficient contract (Faber 1983). In fact, the main purpose of exchange and the contract is to achieve Pareto improvement so that the result of the contract is Pareto-superior to the situation in which the contract would not have been concluded (Schäfer and Ott 2000). Thus the concept of freedom of contract may be analyzed from the perspective of interaction between the legal system and the economic environment in order that the legal norms would enhance efficiency.

2. Positive analysis: gross unfairness and excessive benefit within the *Principles of European Contract Law*

Interest in the idea of harmonization of European contract law within European law has grown considerably (Basedow 1996, Lagrand 1997, Alpa and Buccico 2001). As far as the issue of harmonization is concerned it may be stated that the unification resulted in the elaboration of a few projects of European contract law. So far, these projects are only doctrinal proposals of a strictly private character. In 1999 stemming from the initiative of the Committee on the

Harmonization of European Contract Law a first version of such code, named *Lando's Principles* or *Principles of European Contract Law* (PECL), has been elaborated. The project is intended to become a part of a uniform European Civil Code that has been in preparation by the Working Group on European Civil Code. This group is headed by Prof. Christian von Bar and in its work it concentrates on the regulation of particular types of contracts, such as sale, contracts on rendering services, insurance contracts and financial actions (Lando 1997).

The revised version of PECL consists of 131 articles included within nine chapters: General Provisions (art. 1.101–1.305), Formation of Contract (art. 2.101–2.211), Authority of Agents (art. 3.101–3.304), Validity of Contract (art. 4.101–4.119), Interpretation of Contract (art. 5.101–5.107), Contents and Effects of Contract (art. 6.101–6.111), Performance of a Contractual Obligation (art. 7.101–7.112), Non-Performance and Remedies in General (art. 8.101–8.109), Particular Remedies for Non-Performance (art. 9.101–9.510). The authors of PECL emphasize the fact that those rules are primarily designed for commercial partners. So-called non-merchant transactions also lie within the scope of regulation. It is an effect of the assumption adopted by the authors of PECL, according to which the division between ordinary citizens and professionals should be abolished (Lando 1997). Nevertheless, the distinction between consumer and commercial contracts is very often treated as a problematic one. Some authors emphasize that unified European Contract Law should abolish the distinction between commercial and consumer contracts as this difference is treated as a thoroughly artificial one that does not correspond with the economic reality. Mattei raises two principal objections to the notion of homogeneity of European contract law (Mattei 1999). Firstly, he points out that a separate market for consumers and a separate market for producers do not exist in reality. Thus, the distinction is artificial and arbitrary, not taking the economic reality into account. Accordingly, the main problem of contract law is how to merge supply and demand into a single market.

Secondly, the so-called “schizophrenic contract law” with two sets of rules, one for consumers and the other for producers is based on the concept of status in case of standards of proof, vitiating elements or unfair contractual terms, whereas drafters should concentrate on contract rather than on status of parties involved in transactions. Both arguments are supported by reasoning based on the concept of economic efficiency. On the other hand many authors stress the significance of the principle of solidarity in contract law (Wilhelmson 1995, Kennedy 2002). Within the context of PECL solidarity means that the concept of contract is based on two main contradictory principles: autonomy of parties and protection of a weaker party. The principle of freedom of contracts has been explicitly stated in Art. 1.102 point 1 PECL,

according to which: “Parties are free to enter into a contract and to determine its contents, subject to the requirements of good faith and fair dealing, and the mandatory rules established by these principles.” Moreover, the draftsmen have incorporated into PECL some institutions protecting a weaker party. These institutions may be divided into two groups. The first includes some procedural means of control and limitation of the bargaining principle such as a fundamental mistake as to fact or law (art. 4.103 PECL), inaccuracy in communication (art. 4.104 PECL), incorrect information given by the other party (art. 4.106 PECL), fraudulent representation by words or conduct or by non-disclosure of any information which should be disclosed in accordance with good faith and fair dealing (art. 4.107 PECL), imminent and serious threats (art. 4.108 PECL). Additionally, substantial control of contractual terms is possible. Article 4.110 PECL refers to unfair terms of contracts which have not been individually negotiated. The potential scope of application of this provision is fairly limited. In case of standard forms and contracts of adhesion there is no possibility to set a contract aside in case of inadequacy in value of one’s party’s obligation compared to the value of the obligations of the other party (art. 4.110, point 2 b PECL). The problem of inadequacy of bargaining power may be taken into account only in case of individually negotiated contracts, because the draftsmen of PECL proposed in art. 4.109 PECL (ex art. 6.109) yet another mechanism of the so-called internal and substantial control of contractual terms. This article states that:

- (1) A party may avoid a contract if, at the time of the conclusion of the contract:
 - (a) it was dependent on or had a relationship of trust with the other party, was in economic distress or had urgent needs, was improvident, ignorant, inexperienced or lacking in bargaining skill, and
 - (b) the other party knew or ought to have known of this and, given the circumstances and purpose of the contract, took advantage of the first party’s situation in a way which was grossly unfair or took an excessive benefit.
- (2) Upon the request of the party entitled to avoidance, a court may if it is appropriate adapt the contract in order to bring it into accordance with what might have been agreed had the requirements of good faith and fair dealing been followed.
- (3) A court may similarly adapt the contract upon the request of a party receiving notice of avoidance for excessive benefit or unfair advantage, provided that this party informs the party who gave the notice promptly after receiving it and before that party has acted in reliance on it.

This provision seems to reflect the principle of solidarity and the concept of so-called “protective contract law” in its full extent (Lurger 2004). According to art. 4.109 PECL the distorted balance may be improved by the court if some requirements are accomplished. Firstly, the party is to be treated as a weaker one if a special relationship such as trust or dependency may be established or in some special circumstances such as economic distress, urgent needs, or

because of a special characteristic of that party such as: improvidence, ignorance, inexperience, lack of bargaining skill. Secondly, a weaker party may raise the defense of excessive benefit or unfair advantage if the other party exploited the situation of the weaker party. According to PECL such exploitation takes place in two cases: when the stronger party knew or should have known about the weakness of the weaker party and took advantage of such a situation which finally led to gross unfairness or excessive benefit.

The concept of fairness as implemented in PECL could only be negatively defined. Fairness according to art 4.109 PECL means lack of exploitation of the difficult situation of the weaker party based on a kind of symmetry. Additionally in art 4.109 (2) PECL fairness simply means “avoidance for excessive benefit or unfair advantage”. Certainly such a concept of fairness does not have any normative and practical meaning, creating a place for judicial interpretation and vast scope for judicial discretion. This approach seems to be typical of recent developments of judicial governance (Hirshl 2004). Such a model of an active judicial governance is based on the assumption that judges could directly influence both allocative and distributive consequences due to the process of proportionality analysis based on the so-called weighting of the conflicting rights and principles (Stone Sweet 2000). In case of art 4.109 PECL this mode of judicial governance will inevitably lead to a vast clash between the principle of freedom of contract on the one hand and the principle of good faith and fair dealing on the other. Therefore it seems that the concept of excessive benefit or unfair advantage is *prima facie* very broad. Additionally it may be pointed out that major terms applied in this provision, such as “urgent needs”, “lack in bargaining skill” or “excessive benefit”, are quite vague. Eventually it is very difficult to foresee any potential consequences of this rule in practice.

3. Normative analysis 1: Hypothetical bargain in Coasean world as a response to contract failure

Art. 4.109 PECL (1) states that in the event of “excessive benefit” or “gross unfairness” a party who suffers loss (the “weaker party”) due to dependency on the other party or a relationship of trust with the other party, being in economic distress or having urgent need, being improvident, ignorant, inexperienced or lacking in bargaining skill may either avoid a contract or request a court to adapt the contract. The court, while altering a contract, should “bring it in accordance with what might have been agreed had the requirements of good faith and fair dealing been followed” (art. 4.109 PECL). Additionally the contract may be changed by request of the party who received the notice of avoidance (the “stronger” party) if the party informed the counterparty immediately after receiving the notice about the intention to maintain the

reconstructed contract. In terms of judicial governance understood as the capacity of the court to engage in regulatory decisions (Stone Sweet 1999, Stone Sweet 2000, Hirshl 2004) the whole structure of the defense of “excessive benefit or unfair advantage” is thus based on a three stage procedure:

Firstly, the court scrutinizes whether the requirements (procedural failure and the effect in form of excessive benefit or unfair advantage) are fulfilled. The result of procedural failure in form of excessive benefit should be measured against a standard of contractual equivalency or contractual balance. The question arises whether such an objective standard exists and how it should be measured.

Secondly, the court contemplates whether to resolve or to alter the contract, taking into account the position of both parties and deciding whether the redrafting of contractual terms is appropriate (art. 4.109 (2) and (3) PECL).

Thirdly, if the adaptation of contract is a preferred option, the court constructs the contract or some contractual terms according to the principle of hypothetical consent and the principle of good faith and fair dealing. It is remarkable that the court has to measure the real contract against the standard of a perfect hypothetical contract. It is significant in stages one and three. The adjudicator may rest on a rebuttable presumption according to which the more serious the deviation from the perfect market the weaker grounds for enforcement of contract.

In light of the standard law-and-economics literature the concept of defense of “excessive benefit or unfair advantage” due to improvidence, ignorance, inexperience or lack in bargaining skill, regulated in art 4109 (1) PECL, should be interpreted narrowly and limited to cases in which a contract has been extracted from a weaker party due to monopoly or economic duress (market failure) or involuntarily (contract failure). One of the major economic purposes of contract law is a potential improvement of exchanges in case of “contract failure” by virtue of regulation of terms of contract in order to restore efficiency (Cooter and Ulen 2000). “Contract failure” takes place when parties are not acting in a rational way or the exchange is not voluntary whereas “market failure” results from high transaction costs or lack of access to a competitive market leading to one-sided bargains. In cases of strikingly one-sided contracts courts should and usually prefer to rely on procedural doctrines assuming that the inequality of bargaining power is probably accompanied by a typical vitiating element such as duress, fraud, undue influence, wrongful misrepresentation or some kind of mistake.

The procedural solution to the problem of distorted contractual balance is based on the assumption that the self-interested individual does not make detrimental contracts freely. If the contract is in fact detrimental to one party, there is a high probability that the consent was

illusory and there was no agreement at all. This solution is deployed in cases of duress or the abuse of bargaining power. The doctrine is supported by economic analyses of contract law. The economic analysis of contract requires that a Pareto-efficient contract is made freely and is at least *ex ante* improving the position of at least one party. The other party cannot be *ex ante* worse off. The typical example of sub-optimal contracts is a contract made in case of serious threat (duress), fraud, or sometimes by mistake. The enforcement of such a contract would minimize the aggregate social welfare because it would be transferred to those using threats and to potential means to protect against them. Thus in the presence of a contract failure resulting from high transaction costs the court should interpret the contract according to the hypothetical result of a bargaining process in a zero transaction cost environment. This proposition has been presented for the first time by Guido Calabresi and Douglas Malamed (Calabresi and Malamed 1972). The proponents of that concept very often refer to such a model contract as the hypothetical bargain or hypothetical contract. According to Richard Posner such a hypothetical contract should “economize on transaction costs by supplying standard contract terms that the parties would otherwise have to adopt by express agreement” (Posner 1992).

The problem of hypothetical bargain or hypothetical contract has been widely discussed in law-and-economics literature (Ayres and Gertner 1989; Craswell 1989). Charny observed that the hypothetical bargain may be perceived as an ideal generalized normative standard, a pattern of efficient exchange (Charny 1991). Such a hypothetical bargain is to be implemented both as a standard against which potential benefit taken out of a contract is measured and as a normative model according to which the contract may be constructed or adapted. In both cases the concept of hypothetical bargain is crucial. According to this model the contract made by parties should specify some physical characteristics such as date, place of performance or the price of a commodity for every possible future state of nature (Arrow and Debreu 1954). Only such a contract, namely “the complete contingent claims contract” leads to efficient outcomes. The fact that it is virtually impossible to make a “complete contingent claims contract” because of high transaction costs or other factors is not relevant if the hypothetical contract is treated as a normative model (Coase 1990). The court refers to the criterion of efficient contract made freely in a competitive market in order to decide whether the contract or some explicit terms of contract having been made by parties may be set aside. If the contract is not rationally or voluntarily concluded then the court decides whether to set the contract aside or to change the terms in the contract. This approach is based on the assumption that freely accepted contractual terms in a competitive market generate efficient outcomes. If, however, the contract is one-sided or any procedural failure has been proved, than the contract may not be treated as an efficiency-

enhancing instrument. Thus the whole problem of contract failure can be solved on the level of efficiency. There is actually no need to refer to any concept of “good faith and fair dealing” in this respect.

Moreover, the standard economic analysis of contracts suggests skepticism towards the regulation of contracts based on distributive reasons. There are two main objections to implementation of any distributional schemes in contract law. It is commonly agreed that contract law could concern distributive aspects, however, the regulation of contracts seems to be much less efficient than the redistribution of wealth by the mechanism of taxes and public law in general (Kaplou and Shavell 2006). Even some proponents of the implementation of the idea of fairness in case of judicial regulation take the cost of such an intervention into account (Calabresi 1970). The economic results of such an intervention can additionally be opaque. Two aspects need mentioning in this respect. Firstly, regulation concerning prices will inevitably lead to redistribution between two sides of the market, the suppliers and consumers, especially in case of monopoly (Hermalin et. al 2007). The second potential consequence of distributive regulation has been pointed out by Buchanan who observed that regulation of a voluntarily agreed contract would result in changes of the parties’ reservation prices for exchange thus shifting the impact of a regulation to its potential beneficiaries and causing an adverse effect (Buchanan 1970).

Some proponents of the economic approach to contract law emphasize the congruence between respect for freedom of contract and the Coase theorem. Hermalin, Katz and Craswell claim that the modified Coase theorem supports a wide scope of freedom of contract. According to these authors the Coase theorem could be interpreted in the following way: “Consider a bilateral contracting situation in which the parties are rational with respect to their individual self-interest, but are not mean-spirited; and in which the parties can agree on any contract without incurring transaction costs. Then the allocation after contracting will be Pareto efficient regardless of the initial allocation” (Hermalin et al. 2007). Additionally B. Hermalin, Katz and Craswell propose the following corollary in respect to freedom of contract: “Under the assumption of the modified Coase Theorems, interference or restrictions on the contract the parties sign cannot increase the Pareto efficiency of the contracted – for outcome; that is, there should be freedom of contract if the only welfare issue is the efficiency of the outcome achieved by the contract from the perspective of the parties to the contract.” (Hermalin et al. 2007). Thus the modified Coase theorem seems to prove the idea of hypothetical bargain as a sound one. There are two problems concerning this interpretation and the underlying methodology of the law and economics.

Firstly, the Coase theorem does not refer to the competitive market, as it has been proved by many authors and seems to be commonly accepted in the law and economics literature. Calabresi pointed out that the Coase theorem should be read as follows: “If one assumes rationality, no transaction costs and no impediments to trades, all misallocation of resources would be fully cured in the market by bargains” (Calabresi 1968). Regan concurred, observing that the Coase theorem is false as a theorem in welfare economics and could only be a proposition in game theory. According to his proposition the Coase theorem states that “bargaining games with zero transaction costs reach efficient solutions” (Regan 1972). The question remains whether this game-theoretic version of the Coase theorem holds or does not. Thus the interpretation of the Coase theorem leads to the second observation which seems to annihilate the soundness of the “hypothetical bargain or hypothetical contract” approaches.

Secondly, the Coase theorem in this form is false, since there is no proof that the allocation even in the ZTC world is going to be efficient. The assumption according to which in the absence of transaction costs parties will always agree on terms of contract has been convincingly falsified by Cooter (Cooter 1982). Cooter’s critique of the Coase theorem could also be extended to the modified Coase theorem in the form presented by Hermalin, Katz and Crasswell (Hermalin et al. 2007). It is striking that those authors assume that the parties to the Coasian bargaining are “not mean spirited” without further explanation. In light of the game theoretical critique of the Coase theorem such an assumption is not justified. The parties could be mean spirited, taking into account that the assumption of zero transaction costs does not annihilate strategic behavior. In other words the main obstacle to contracting in a model, hypothetical zero transaction cost world is not related to transaction costs which do not exist but to strategic behavior of potential contractors.

The strategic aspect of the Coase theorem looms large especially in light of the allegation made by Coase that the parties could but not necessarily have to agree (Coase 1990). The Coase theorem thus loses its appealing traits and becomes inconclusive, as Cooter rightly observed: “the mechanism for achieving efficiency in the absence of a competitive market is bargaining” (Cooter 1982). The consequences of this are twofold: firstly, the prima facie strong case for freedom of contract loses its support in the Coase theorem since in the absence of any mechanism of division of the surplus from exchange the parties could be unable to agree on terms of contract even under the assumption of zero transaction costs. Concurring bargaining (even) in the absence of transaction costs does not necessarily lead to the efficient i.e. Pareto-optimal outcome. If this is true there is no point in referring to Coasean bargaining as the model of exchange, since deviation from the model of efficient contract can still happen in a Coasean

zero transaction cost world. This problem gains special attention in case of those contracts that are not agreed on competitive market. It seems that in case of the “market failure” those contracts cannot be effectively regulated within the framework of the hypothetical bargain theory, since the hypothetical bargain corresponding to the Coasian bargain does not automatically ensure an efficient solution.

4. Normative analysis 2: hypothetical solution to the bargaining problem as a response to a market failure

The typical example of market failure very often described in law-and-economics literature is duress. Duress is sometimes analyzed in cases such as so-called “economic duress” or “necessity” from the perspective of bilateral monopoly (Cooter and Ulen 2000). In this case the duress results not from threat of violence or illegal pressure but rather from the economic position of parties. It seems that this has been encapsulated within the concept of “excessive benefit” or “unfair advantage” due to dependence on the other party, economic distress or urgent needs regulated in art 4.109 (1) PECL. This kind of duress (economic duress) results from the so-called “holdup problem”, where the threat to breach a contract constitutes a potential increase in one party’s bargaining strength due to the dependence of the other party and lack of competition.

Economic duress is perceived as producing inefficiency. Typically the counter-party threatens to destroy the potential value of the dependence. In other words, the hold-up problem results from dependence on performance of contractual obligation. A threat tends to destroy the surplus from cooperation and hence contracts renegotiated in such cases are usually unenforceable, according to the following recommendation suggested by Cooter and Ulen “a promise extracted as the price to cooperate in creating value is enforceable, and a promise extracted by a threat to destroy value is unenforceable” (Cooter and Ulen 2000). Economic duress very often resembles a bilateral monopoly. It results partly from the dependence of one party which limits his or her access to the free market. Hermalin, Katz and Craswell refer to the concept of rent seeking while analyzing the essence of duress and one-sided bargains (Hermalin et al. 2007). They additionally notice that Cooter extends this reasoning to all cases of market failure, when bargaining takes place under the assumption of market power and no access to the market (Cooter 1982). Just to quote: “The reason for regulation of such a contract is thus analogical as in case of typical duress. Even when an exchange is efficient, in the absence of a well-defined mechanism for dividing the gains from trade, the parties may destroy part of the surplus in attempting to influence its distribution” (Hermalin et al. 2007). If we assume that the

lack of such a “well-defined mechanism for dividing the gains from trade” is the main reason for the potential inefficiency of such a bargain then this approach at least partly corresponds to the framework adopted in art. 4109 (2) PECL. The economic analysis of contract treats the bilateral monopoly as a typical “market failure” resulting from extremely high transaction costs and a very limited set of alternatives. In these circumstances the contract should not be enforced. Landes and Posner even proposed that transaction costs may be avoided by implementation of the rule usually adopted in the admiralty rules of salvage, according to which: “the salvor is entitled to a reasonable fee for saving the ship, but (...) a contract made after the ship gets into trouble will only be evidentiary of what that reasonable fee is” (Landes and Posner 1978). The question arises whether such a criterion of “reasonable fee” is justified by economic reasoning. Assuming that such a criterion may be implemented by the adjudicator as a standard of “hypothetical bargain” it seems that it is at least too vague. Assuming that the hypothetical bargain in the Coasean world cannot serve as a benchmark for regulating contract in an efficiency-enhancing way, the question arises which standard should be applied by judges in case of market failure? According to art. 4.109 (2) PECL the court should refer to hypothetical agreement observing the universal and ideal standards of good faith and fair dealing.

The problem of gross inequalities in bargaining power has been analyzed so far solely from the perspective of efficiency. The standard economic analysis of contract law assumes that the contract should be assessed exclusively from this standpoint (Posner 2002). This approach does not lead to a satisfactory result since there is no possibility to reconstruct the efficient contract exclusively on the basis of welfare economics. However the problem of two parties’ bargain has been explored by game theory which provides satisfactory models and hypothetical optimum solutions to this problem. If two parties are negotiating in case of monopoly or monopsony, it is regarded as a typical bargaining problem. Is there any satisfactory solution to the problem? It seems that more sophisticated concepts deployed by game theory doctrines should be analyzed from the perspective of potential solutions to the bargaining problem and a potential search for criteria of fair, just exchange in those circumstances. Additionally the adjudicator cannot rely on the hypothetical bargain in competitive equilibrium because the whole “hold-up” problem results from the lack of a relevant market. Thus the “hypothetical bargain” successfully implemented in “contract failure” cases is obsolete (Binmore 1998).

On the other hand, within the context of art. 4.109 PECL it is necessary to refer to some impartial ideal model of a just, fair and efficient bargain in order to check whether the party “in urgent need” is injured by the other party extracting some “excessive benefit or unfair advantage”. Whether the benefit is excessive or not, it should be somehow compared to the

hypothetical division of surplus from the exchange stemming from the face-to face ideal bargaining process (Baird et. al. 1995). In order to reconstruct sound criteria for a fair division of surplus in monopoly the following solution provided by the game theory may, however, be contemplated. The problem of a “market failure” may be analyzed from the perspective of potential solutions to a bargaining problem (Katz 1990). The problem of the choice of terms of the contract may be presented as another non-cooperative game, namely Rubinstein’s bargaining game (Rubinstein 1982). In this game both players are making proposals (offers and counter offers) until one of the offers is accepted. The factor of time in which the agreement is reached is taken into account, so that δ represents the amount of decrease for a party for each period of time. If A offers x , he retains the share $1 - x$. Additionally the discount of time should be taken into account. In these circumstances the counteroffer from B is more attractive for A than his next offer if it gives $(1 - x)\delta$. The game illustrates the thesis that the outcome of the bargaining process is diminishing in time (“the cake is shrinking”), so that the sooner one offer is accepted, the better. This game has a unique subgame-perfect equilibrium:

A offers B: $\delta/(1 + \delta)$ and does not accept any counteroffer from B. B accepts any offer equal or greater than $\delta/(1 + \delta)$ or makes a counteroffer of $(1 - x)\delta$. A receives $1 - x$ or $1/(1 + \delta)$.

The strategy of A is never accepting a counteroffer, taking into account that B’s counteroffer is not larger than $(1 - x)\delta$. The best strategy of B is to take the initial offer. Thus A makes the offer large enough so that B is not able to make a counteroffer preventing repetition of the same offer. The question arises whether such a game may have a unique efficient solution. If such a unique solution were attainable then it would correspond to the terms of the hypothetical bargain. The problem of division of the surplus would thus have been solved and the efficient outcome would have been assured, as R. Coase admitted in *Notes on the Problem of Social Cost*: “It is certainly true that we cannot rule out such an outcome if the parties are unable to agree on the terms of exchange, and it is therefore impossible to argue that two individuals negotiating an exchange *must* end up on the contract curve, even in a world of zero transaction costs in which the parties have, in effect, an eternity in which to bargain” (Coase 1990).

It is important to note that if the players in Rubinstein’s bargaining game had an eternity in which to bargain then the game would have had very appealing characteristics. The model assumes that in special case ($\tau \rightarrow 0$) where there is no time interval between the rejection of proposal and a new proposal there is virtually an advantage to the party who makes the offer first. There are no incentives to cheat in this game and no mechanism for sustaining commitments is required. Within time the game converges to a Nash bargaining solution.

Additionally the possible asymmetries between the parties result from different attitudes to the passage of time. In fact the interpretation of Rubinstein's bargaining game stresses that the more patient party has more bargaining power. The difference does not lie in the bargaining skill because both parties are rational optimizers. All these characteristics of the Rubinstein game are feasible under the assumption that bargaining is costless. If transaction costs are zero, the lapse of time between offer and counter-offer does not matter. As Coase has rightly observed, the peculiar feature of the zero transaction cost world is that: "when there are no costs of making transactions, it costs nothing to speed them up, so that eternity can be experienced in a split second" (Coase 1990). This means that the Coasian zero transaction cost world corresponds to Rubinstein's bargaining game with no time interval between the rejection of a proposal and a new proposal. This observation does not exhaust the advantages of modeling a hypothetical bargain along the lines of the Rubinstein bargaining game. There is an additional advantage of this approach being adopted as part of judicial governance strategy under art. 4.109 (2) PECL. The result of the game corresponds to the Nash solution to the bargaining problem. This solution has been characterized by Nash as follows:

The economic situations of monopoly versus monopsony (...) and of negotiation between employer and labor union may be regarded as bargaining problems. A "solution" here means a determination of the amount of satisfaction each individual should expect to get from the situation, or, rather, a determination of how much it should be worth to each of these individuals to have this opportunity to bargain. (Nash 1950).

The Nash bargaining solution indicates the unique outcome of a bargaining process which is efficient and predictable. This means that parties bargaining in a zero transaction cost world will certainly agree on terms indicated by the Nash bargaining solution. Moreover, the Nash bargaining solution provides the mechanism of distribution of the surplus from cooperation and thus its implementation vindicates the robustness of the Coase theorem. The Nash bargaining solution provides the game-theoretic solution to the indeterminacy of the Coase Theorem. Under the assumption of zero transaction costs rational bargaining parties will inevitably agree on the division of surplus or contractual terms corresponding to the Nash bargaining solution. Additionally the efficiency of such a contract might be taken for granted since the Nash bargaining solution could be characterized as consisting of determination of a unique split of revenue out of an infinite number of possible efficient (in the sense of Pareto optimality) outcomes. This solution refers to the existence of the single rule f selecting a unique point denoted $x =$ where P denotes payoff space, c denotes conflict point, which corresponds with the position of the party if no contract is agreed. The unique bargaining solution that satisfies these

axioms is a function, where P is payoff space, c – conflict point. The bargaining outcome is represented in utilities (u_1, u_2) The Nash bargaining solution is a function $f(P, c)$ such that:

$$(P, c) \rightarrow f(P, c) = \arg \max_{x \in P, x \geq c^0} (u_1 - c_1)(u_2 - c_2) \quad (1)$$

The bargaining solution satisfies four axioms:

• *Independence of equivalent utility representation:*

If a different von Neumann-Morgenstern representation of players' preferences over bargaining outcomes is chosen, this does not affect the bargaining outcomes in real terms but only its utility representation. In other words, standardization (e.g. multiplying) the outcome has no influence upon result:

$$F_i(P, c) = u_i^* \Rightarrow a_i f_i(P, c) + b_i = a_i u_i^* + b_i \quad a_i > 0 \quad (2)$$

• *Symmetry:*

If the bargaining problem (P, c) is symmetrical, then the solution must assign equal payoffs to both players:

$$\{(u_1, u_2) \in P \Leftrightarrow (u_2, u_1) \in P\} \wedge c_1 = c_2 \Rightarrow f_1(P, c) = f_2(P, c) \quad (3)$$

• *Independence of irrelevant alternatives:*

If $f(P, c)$ is the solution to bargaining problem (P, c) and a reduced set of feasible payoff combinations Q , in which $f(P, c)$ is still a feasible payoff combination, then it also has to be the solution to (Q, c) . This is possible because of the fact that only some irrelevant alternatives are missing:

$$Q \subseteq P \wedge f(P, c) \in Q \Rightarrow f(Q, c) = f(P, c) \quad (4)$$

• *Weak efficiency (Pareto-optimality):*

Players fully exploit payoff opportunities:

$$x' > f(P, c) \Rightarrow x' \notin X \quad (5)$$

Those axioms characterizing the Nash bargaining solution could be interpreted as the conditions of fair division or an axiomatic expression of the idea of fairness. Within the context of PECL

the idea of regulating or re-drafting contractual terms in the form of “bringing it in accordance with what might have been agreed had the requirements of good faith and fair dealing been followed” (art. 4.109 PECL) seems to correspond with the axiomatic assumptions about the Nash bargaining solution, and with the solution itself. The requirements of good faith and fair dealing refer to the universalized conditions of symmetry and independence of both irrelevant alternatives and equivalent utility representation. It could, *a contrario*, be stated that the lack of symmetry and invariance would lead to manifestly unfair solutions and thus would contradict the whole idea of fairness within the context of contract law. According to art. 4.109 PECL the contract should be interpreted “in accordance with what might have been agreed”. It has been proved that the Nash bargaining solution provides the exclusive possibility to determine the output of the bargaining process. Thus the concept of fairness in contracts is no longer vague and obsolete. This finding contradicts the objection of Kaplow and Shavell, who claim that the idea of fairness in contracts is notoriously vague and competes with the concept of efficiency (Kaplow and Shavell 2002). It also seems that the alleged conflict between fairness and efficiency is illusory since the Nash bargaining solution contains both fairness and efficiency. The concept of fairness is no longer vague and could be characterized by independence and symmetry, thus corresponding to the idea of fairness as impartiality. The concept of fairness can be represented in mathematical form and is necessarily entangled with the allocative efficiency in the form of Pareto optimality. Additionally it seems paradoxical that the robustness of the Coase theorem depends on the existence of the mechanism of fair distribution within a zero transaction cost world.

The question arises whether this model may give some support for the estimation of the bargaining result from the perspective of a wider concept of fairness. For Nash the invariance of irrelevant alternatives meant that the bargaining process was contextualized and gave no general basis for the estimation of fairness. Sen emphasizes that the output of the bargaining process depends on the scope of alternatives and the disagreement point (Sen 1970). According to the interpretation of Nash solution provided by Holler and Napel, the problem of fairness is unresolved, taking into account the incomparability of individual utility (Holler and Napel 2001). Such a situation may be criticized from the perspective of fairness. This property does not qualify the appealing characteristics of the Nash program in general and the Nash solution to bargaining problems. However it stresses the need for further developments in cooperative games theory. Potential deficiencies of the Nash solution should not bother the adjudicator searching for any intrapersonal and impartial criteria of a fair division in case of a market failure.

The criticism of the concept of the Nash solution is very often a result of some misunderstanding. Nash explicitly stated that the solution is meaningful under some assumptions. Some of those assumptions have been formally stated as axioms. Some of them were inserted as obvious. At the beginning of his cornerstone article Nash explicitly stated that: “In general terms, we idealize the bargaining problem by assuming that the two individuals are highly rational, that each can accurately compare his desires for various things, that they are equal in bargaining skill, and each has full knowledge of the tastes and preferences of the other” (Nash 1950).

5. Conclusion

Those observations generally prove two suggestions. Firstly, the freedom of contract may be *ex post* limited in cases in which the result is inefficient and thus leads to socially undesirable effects. From this perspective, however, it is arguable whether the restrictions of freedom of contract may be legitimate. It seems that in the cases in which voluntarily agreed contracts lead to potential impoverishment of a weaker party, the welfare system and public policy seem to be more adequate instruments than contract law. However the standard concept of hypothetical contract may be implemented in these circumstances under some conditions, namely if the contract is grossly unequal, which is reflected in the concept of “excessive benefit” or “gross unfairness” in art 4.109 PECL.

Secondly, the disproportion should be proved to have resulted from a typical procedural vitiating element. Within the context of PECL these elements are explicitly enumerated in art 4.109 (1) PECL. The concept of hypothetical consent should justify the legal intervention. A hypothetical contract should reflect the criterion based on a potential solution to the bargaining problem, typically the Nash solution. The solution to the bargaining problem provides a Pareto-efficient outcome (this being one of the axioms formulated by Nash). In these circumstances it seems that the basis for the legitimacy of such a solution is endogenous, thus the solution predicts the result of the bargaining process. Hence, the requirement of fairness in contracts is not meaningless if contextualized (market or non-market environment) and specified according to some usually accepted assumptions such as Pareto-efficiency, symmetry, invariance. The reconstruction of such criteria for a fair and efficient hypothetical contract within the scope of judicial governance is thus offered by a model of bargaining deployed within a framework of game theory.

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