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RETHINKING THE PARADOX OF COMPENSATION

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Rethinking the Paradox of Compensation

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ABSTRACT

The paradox of compensation suggests that it is impossible to design an optimal contract remedy: while compensation for breach makes promisors breach and perform optimally, it also makes promisees indifferent to the harms of breach, thereby allowing them to over-rely. The current paper proposes a solution to this paradox, using a rule that assures optimal levels of performance without making promisees indifferent to the possibility of breach. Such a rule would allow the promisee to induce promisor breach and require the promisor to disgorge any breach profits to the promisee. This assures optimal performance, as the promisee can order breach and enjoy the full benefits associated with it, as well as optimal levels of promisee reliance, since in case of breach the promisee's profits do not depend on her level of reliance.

1. INTRODUCTION

The paradox of compensation, in its most general form, points to a fundamental problem with the legal mechanism of compensating victims for harms. The duty to compensate for harms may deter potential injurers from harming others, but at the same time leave victims with no incentive to avoid harms (Cooter 1985). Optimal incentives for both injurers and victims would require that both bear the full costs of

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harm; this, unfortunately, is quite difficult to achieve.[1] This problem is most rigorously studied in Cooter and Porat (2002) and Cooter and Ulen (2012), following Ronald Coase's famous articulation of the problem of reciprocal causation (Coase 1960).

In the context of contract law, the paradox of compensation stipulates that it is not possible to define a contract remedy that will both incentivize promisors to perform optimally and incentivize promisees to rely optimally (Cooter and Ulen 2012, p. 331). The duty to compensate in case of breach incentivizes promisors to default only when default is desirable; at the same time, this makes promisees indifferent to the possibility of breach, therefore allowing them to over-rely (Shavell 1980). This is a fundamental point. Legally enforceable contracts are supposedly desirable as they allow for reliance on executory contracts; if contract rules are in fact unable to efficiently achieve this goal, the social advantage of this institution is called into question.

The current paper studies a rule combining disgorgement of profits with a promisee put option as a solution to this general problem. The concept of disgorgement used here is based on the fourth measure of compensation added by Katz (1988) to the three more traditional measures described in the work of Fuller and Perdue (1939).[2] Under the disgorgement rule, all breach profits are disgorged to the non-breaching party. This concept is used in the literature as antithetical to the idea of efficient breach: if all breach profits are disgorged to the promisee, there is no incentive for the promisor to breach when this would be profitable. Although typically

[1] This is a basic architectural problem, resulting from the bipolar structure of private law litigation: since private law operates mainly by instituting payments from one private party to another, it would be almost impossible to utilize it to make *both* parties fully internalize a given cost and be optimally incentivized. See, more generally, Dagan (2008). One solution to this problem would be to step out of the bipolar structure of private law by introducing additional players (Cooter and Porat 2002). The current paper proposes a more local solution that operates within the current limitations of the bipolar structure of private law.

[2] The taxonomy offered by Fuller and Perdue is based on two distinctions. First, each remedy is based either on the position of the *promisor* or on the position of the *promisee*; second, it can put that party in the position she would have been in had the contract *never been made* or had the contract *never been breached*. Thus, reliance damages are designed to put the promisee where she would have been had the contract not been made, restitution payments are designed to put the promisor where she would have been had the contract not been made, and expectation damages put the promisee where she would have been had the contract not been breached. Katz completed the theoretical framework by adding the alternative of disgorgement, which puts the promisor where she would have been had the contract not been breached. The assays mentioned here, and much of the literature following them, do not focus directly on measures of damages, but on the underlying *interests* these measures are designed to protect. Interests beyond the four basic ones have also been identified: for instance, Zamir (2007) recognizes an additional interest, arguably motivating large parts of contract law doctrine.

viewed as a disadvantage (Eisenberg 2006), some scholars emphasized the possible benefits of the disgorgement rule as a commitment mechanism (Bar-Gill and Ben-Shahar 2009; Thel and Siegelman 2011).[3]

The rule analyzed here combines disgorgement of profits with a promisee put option. Generally, in option theory literature, contract breach is conceptualized as the exercise of a call option: promisees have a right for performance and promisors can buy that right at any time for some designated price, thereby excusing themselves of the duty to perform. But a rule structuring a corresponding put option is also possible: the promisee would still have a right for performance, but she can force a sale of that right to the promisor. The promisee can decide that the promisor is not to perform and the promisor will instead have to make some payment. The use of option-like mechanisms in the context of contract law is developed in the works of Avraham (2004), Scott and Triantis (2004), Ayers (2005), and Avraham and Liu (2006), following the more general analysis by Calabresi and Melamed (1972).[4]

A promisee put option and the measure of disgorgement were most explicitly joined together by Richard Brooks in a thought-provoking essay in the *Yale Law Journal*. Brooks presented a novel and controversial contract rule, under which promisees have the power to decide about promisor default and, in case of default, any potential extra profits the promisor could make by defaulting would be disgorged to the promisee (Brooks 2006). Brooks demonstrated that such a rule would assure efficient levels of performance and breach, thus offering an innovative contribution to

[3] The study of the disgorgement measure is enjoying an unexpected revival, at least somewhat related to the publication of the new RESTATEMENT (THIRD) OF RESTITUTION AND UNJUST ENRICHMENT (2011); The Restatement, in §39, supports a rule that makes a breaching party disgorge all profits from breach if the breach was "opportunistic" or "deliberate." This proposition is a direct challenge to the idea of efficient breach (Eisenberg 2006; Roberts 2009; Markovits and Schwartz 2011; Thel and Siegelman 2011). Thel and Siegelman also point to a recent trend in the case law favoring more explicitly the idea of disgorgement; see EarthInfo, Inc. v. Hydrosphere Resource Consultants, Inc., 900 P.2d 113, 119 (Colo. 1995); Univ. of Colo. Found., Inc., v. Am. Cyanamid Co., 342 F.3d 1298 (Fed. Cir. 2003); Daily v. Gusto Records, 2000 U.S. Dis. LEXIS 22537 (M.D. Tenn., Mar. 31 2000); Dastgheib v. Genentech, Inc., 483 F. Supp. 2d 546, 552 (E.D. Pa. 2006).

[4] Calabresi and Melamed were the first to emphasize an important point: legal entitlements can be protected in different ways and, in particular, the identity of the agent able to decide about removing the entitlement is important. In the context of contract law, this was later taken to mean that the decision about breach can be given, in different ways, either to the promisor or to the promisee. See, generally, Morris (1993), Krier and Schwab (1995), Ayres and Goldbart (2001), Avraham (2004), and Scott and Triantis (2004). Calabresi and Melamed presented the important distinction between property rules and liability rules: under a property rule, only the entitlement holder can decide to revoke the entitlement; under a liability rule, the duty holder can decide to revoke it and will then have to pay some designated price. In these terms, the idea of a put option is close to a property rule protection, as it allows the right holder to decide about revoking the entitlement. The idea of disgorgement also has some property rule characteristics: as it leaves no incentive for the duty holder to revoke the entitlement, it effectively gives the ability to revoke it only to the right holder.

the "efficient breach" debate. The current paper picks up another interesting feature of the rule suggested by Brooks, a feature not discussed in his essay or in the scholarly responses to it. Brooks considered optimal levels of performance and breach, but not different levels of reliance. By considering the effect of this rule on the levels of promisee reliance, the current paper highlights its relevance to the fundamental problem of the paradox of compensation.

The claim supported in the current paper is that a rule combining disgorgement with a promisee put option can contribute to a solution to the paradox of compensation, at least in some situations. Under this proposed rule, the promisee has the power to forgo performance and enjoy all resulting profits; this would assure optimal levels of performance by the promisor. This rule will also assure optimal levels of reliance by the promisee, who is not compensated for *harms* and so is not made indifferent to them. The amount paid under the disgorgement measure does not depend in any way on the harm to the promisee or on the level of reliance by the promisee, so disgorgement does not create an incentive to over-rely. By severing the connection between the incentives for promisor performance and promisee reliance, the rule can assure both optimal performance *and* optimal reliance and thus offer a solution to the paradox of compensation in this context. This result is somewhat counterintuitive and is studied here in detail.

The paper compares different contractual rules using a model for an incomplete executory contract between two parties. The model includes two measures of compensation—expectation and disgorgement—combined with a call or put option, to create four rules:[5]

	Call	*Put*
Expectation	Rule 1	Rule 2
Disgorgement	Rule 3	Rule 4

The results of the analysis show that while Rule 1 (expectation call) leads to optimal performance, it also results in over-reliance and thus demonstrates the classic paradox of compensation. The two following rules are not able to contribute significantly to a solution to the paradox, and I analyze them mainly to illustrate the

[5] The rules discussed here by no means make up an exhaustive list of the options. The number of possible rules is much larger, perhaps infinite (Levmore 1997).

nature of the mechanisms at work here: Rule 2 (expectation put) results in over-performance and over-reliance while Rule 3 (disgorgement call) leads to optimal reliance, given the level of performance, but results in over-performance. Finally, Rule 4 (disgorgement put) is shown to be optimal under the assumptions of the model. It results in the desired level of performance and the desired level of reliance, thus offering a solution to the paradox of compensation.

The paper continues as follows: Part 2 provides a numerical example illustrating the results of the analysis. Part 3 is the formal analysis of the model and the analytical core of the paper. Part 4 discusses the implications of the formal analysis in a more general way. Part 5 briefly concludes.

2. ILLUSTRATION OF THE MODEL

This part provides an informal summary of the formal analysis of the model given in Part 3. The contractual setting is standard: two parties contract for future performance, the promisee chooses the level of reliance, and there is a possibility of future breach. In the example given here, breach may be profitable due to a third-party offer. The formal model in Part 3 allows for breach to be desirable for other reasons, too. For brevity, only Rules 1 and 4 are included in the illustration; Rules 2 and 3 are studied in Part 3 to give a more complete picture.

To begin, assume the promisor is a manufacturer of goods, the promisee is a retail chain, and the parties contract for a future delivery of goods. The cost of production is 9, the promisee pays a contract price of 12 at the time of contracting,[6] and following performance the promisee will be able to sell the goods to consumers for a total of 13. Assume also that the promisee can decide to invest in a marketing campaign to advertise the goods in advance. The cost of advertising will be 2 and if the promisee invests in advertising, she will be able to sell the goods for 15.5 rather than just 13.[7] This investment is *in reliance on performance*, meaning that advertising

[6] It is assumed here, as well as in Part 3, that payment is made at the time of contracting and that the contract price is paid whether or not the promisor eventually performs. An alternative assumption would be that payment is made at the time of performance and is conditioned on performance. This will not change the results of the analysis, as long as the assumption made is kept consistently throughout.

[7] The analysis in Part 3 studies the marginal efficiency of the investment in reliance on performance, rather than a binary "investment or no investment" form of decision.

the goods will prove worthwhile to the promisee only if they are delivered.[8] Additionally, both parties know, at the time of contracting, that there is a 25% chance that, sometime before the time of performance, the promisor will get a better offer to sell the same goods to a third party for the price of 17 rather than 12.[9]

Note that in this specific example, advertising the goods would be a bad investment. Presumably, the contract will be breached 25% of the time, when there is a better offer from a third party. Since advertising increases profits only if the contract is eventually performed, it will increase sales revenue from 13 to 15.5 only 75% of the time. Thus, the cost of advertising is 2, while its prospective value is only 1.875 (75% chance of an income increase of 2.5; that is, from 13 to 15.5).

The contract is assumed to be incomplete: it does not provide explicitly for the contingency of a third-party offer. It also says nothing about the levels of reliance: it does not explicitly say whether or not the promisee should invest in advertising.[10] Therefore, the actions of the parties, in terms of their decisions about the level of reliance and performance, will depend on the contractual rule controlling the transaction.

2.1 Expectation Call

Under the standard rule of expectation damages, the promisor decides whether or not to perform and, if she chooses not to perform, will pay damages equal to the promisee's expected profits from performance. This means expectation damages will be 13 if the promisee did not advertise the goods and 15.5 if she did.[11] This will lead the promisor to perform and breach optimally:[12] if there is a third-party offer, the

[8] The model in Part 3 allows for a more realistic assumption, by which, in case of breach, the return from the investment in reliance on performance does not have to be zero, but would instead be some amount smaller than the return in case of performance.

[9] Note that contracting here still makes economic sense, even though breach is quite probable. The social value of the present contract is either 4 or 4.5 (13 – 9 or 15.5 – 2 – 9), while the expected value of the contract with the third party is just 2 (25%(17 – 9)). The fact that contracting is preferable now does not mean, of course, that default may not be more desirable in the future.

[10] The parties may specify some of these investments in their contract. However, the contract is assumed to be incomplete, so that not all investments are explicitly mentioned. In reality, parties can make many separate investments in reliance on a single contract. Some of those investments would be closely related to the performance itself, some of them more remotely connected with it. Explicitly mentioning all of these in the contract can be extremely costly. In any event, it is clear that the contract cannot provide a full list of all possible investments, stating which should be made and which should not, as the list of investment not to be made could be infinite. Also, note that the desirability of some investments may depend on different contingencies.

[11] Recall that, in any case, the contractual price is paid at the time of performance.

[12] Expectation damages are assumed here, as well as in the formal model, to be fully compensatory: Meaning, they compensate the promisee for any harm caused by the breach, be it economical,

promisor will default, receive a payment of 17 from the third party, and then compensate the promisee in the sum of 13 or 15.5. The promisor pays damages equal to the value of performance and will therefore breach optimally.

However, the level of reliance will not be optimal under this rule. If the contract is performed, advertising the goods results in a profit increase of 0.5 for the promisee (the cost of advertising is 2 and it increases sales income from 13 to 15.5). If the contract is not performed, advertising will not increase the profits from selling the goods, but it will increase the compensation paid to the promisee. This follows directly from the definition of expectation damages, which are based on the promisee's profit from performance. Thus, under expectation damages, investing in advertising the goods will increase profits for the promisee by the same amount whether or not the contract is actually performed. If the promisee invests 2 in advertising, this will result in either an increase of 2.5 in income from sales or an increase of 2.5 in expectation damages. This will lead the promisee to overinvest and choose to advertise the goods, even though this is inefficient. The promisee ignores here the fact that if the contract is not performed, her investment yields no positive return.

This is the quintessential dilemma presented by the paradox of compensation: the fact that damages are equal to the promisee's profits means that the promisor will breach only if breach is more valuable than performance, but this exact same feature means that the promisee is indifferent between the options of performance and breach and will therefore over-rely on contract performance.[13]

2.2. Disgorgement Put

emotional, subjective, objective, substantive, procedural, or other. If any harm is not compensated for, breach under expectations damages would, by definition, be inefficient in some sense.

[13] Of course, expectation damages can lead to inefficient results for reasons besides those pointed out by the paradox of compensation. Generally speaking, if for some reason expectation damages do not fully compensate promisees for harms, then promisors would be led to default too often (Lewinsohn-Zamir, Schwartz, and Schweizer 2012). This could happen, for example, because expectation damages do not compensate promisees for further transaction costs (Friedmann 1989) or because promisees are not compensated for nonmonitory harms. Including information costs in the analysis may also point to some inefficiencies caused by this rule (Bar-Gill and Ben-Shahar 2009). The problem highlighted by the paradox of compensation is nevertheless different in nature, as it suggests an inefficient result even in the pure version of the model, without assuming any information deficiencies or that expectation damages are under-compensatory.

Under the disgorgement put rule, the promisee can excuse performance and ask for disgorgement of profits instead.[14] If the contract is not performed and the promisee does not receive the goods, the promisor will instead have to pay the promisee any profits obtainable by the fact that performance is no longer required. If there is a third-party offer for 17, the promisee can order breach and receive this extra profit.[15] This would mean a profit of 5 to the promisee (17 minus the contract price of 12), which is more than the promisee can get from performance (1.5 or 1, depending on whether or not she advertises the goods). Thus, in the case of a third-party offer, the promisee will choose to excuse performance, will not receive the goods, and will instead receive the payment of disgorgement. To be able to make this payment, the promisor, now free from the contract, will presumably sell the goods to the third party.[16]

Since the promisee decides whether or not the promisor will default and the promisee also enjoys the full profits of default, she will choose default whenever it is desirable. This mechanism assures optimal levels of performance without directly attaching the measure of damages to the value of performance for the promisee.

Consider now the level of reliance under this rule. When deciding about reliance, the promisee knows that there is a 25% chance of a better offer from a third party and that, in such a case, the contract will not be performed and all subsequent profits will be disgorged to her. If the contract is performed (75% probability), advertising the goods will increase the promisee's income by 2.5 (from 13 to 15.5). However, the promisee also knows that if the contract is not performed, advertising

[14] Disgorgement and expectation damages are distinguishable only if the promisee and the promisor have some unique opportunities relating to performance or default; otherwise, the two measures would be identical. Thus, for instance, if both the promisee and the promisor are able to sell to the third party, with similar transaction costs, then expectation damages would equal disgorgement of profits and there is no difference between the two measures. This means that the distinction is important assuming the promisee cannot sell directly to the third party, at least not without some additional transaction cost (Thel and Siegelman 2011, p. 1195).

[15] This rule might seem objectionable if it leaves no way for the promisor to benefit from the contract. Note, however, that under this rule, the promisor would still want to contract. The promisor can contract now under the disgorgement put rule and this guarantees a profit of 3 in case of performance (12 – 9) or in case of default (17 – 17 + 12 – 9). In contrast, waiting for the third-party offer entails a 25% chance of a profit of 8 (17 – 9), or an expected profit of only 2, which is less than the expected profit under the first contract. Therefore, under this rule, the promisor will prefer to contract with the original buyer and not wait for the third-party offer. In reality, of course, the parties could also adjust the price to reflect the level of protection granted by the legal rule and thus assure the mutual profitability of the contract (Shavell 1980); this will not change the results of the analysis and the price is kept constant here for the sake of simplicity.

[16] The measure of disgorgement is based on the actual profit realizable through breach; that is, the promisor will disgorge any profits from the third-party offer after subtracting any costs of making the new transaction. This result is comparable to the result under the standard rule of expectation damages, as presumably under this rule the promisor will only breach if it is profitable considering the cost of contracting and selling to the third party.

the goods will not affect her level of income, as she will receive the same payment of 17 as disgorgement of profits. This means that advertising the goods incurs a cost of 2 for a 75% chance of a 2.5 income increase. This is a bad investment (75%*2 = 1.875) and the promisee will choose not to advertise the goods. Recall that this is also the socially desirable result.

While, in this case, the promisee is compensated in case of default, the measure of compensation does not depend on the promisee's contractual profits and thus does not depend on her level of reliance. This means that the promisee will rely optimally: she will consider the possibility of default when deciding about the level of reliance because, in case of default, reliance will not increase her returns.

Since optimal levels of performance and default are assured here in a manner that does not distort the promisee's incentives to rely optimally, the disgorgement put rule suggests a way to overcome the difficulties described by the paradox of compensation. As demonstrated in the model in the following part, this result applies not only to the current example, but also generally.[17] The analysis is essentially identical also if breach is desirable due to a change either in the cost of performance for the promisor or in the value of performance for the promisee.[18]

3. ANLYSIS OF THE MODEL

The model used here describes the chronological sequence of a contractual transaction in four stages: (1) Contracting for future performance, (2) investment in reliance on performance, (3) the occurrence of contingencies and (4) performance or default.

At the first stage, the promisor agrees to provide some future performance to the promisee. Payment is made at the time of contracting, and the contract price is k.[19]

[17] Since the contract under this rule results in a superior outcome, it is, of course, better for *both* parties. Even if the contractual rule highly favors the promisee, this does not mean a contract made under this rule cannot also be better for the promisor. As this rule increases the value of the contract overall, the promisor can be offered a higher price that will make this contract preferable for her as well.

[18] In terms of the arithmetic, it should not matter if performance is undesirable because there is a third-party offer (breach is profitable) or because the cost of performance is now higher (performance entails a loss). However, in practice, there might be significant differences and courts indeed treat these types of "efficient breach" differently. Courts are more reluctant to require a breaching party to share with the other party any benefits made by way of saved expenses as a result of breach (Thel and Siegelman 2011, p. 1216). This point is closely related to more general differences between losses and gains (Zamir 2012, p. 852).

[19] Note that the contractual price can change with the contractual rule. Presumably, promisees will be willing to pay more for stronger legal protection, and promisors will charge more for being more strongly committed. In this sense, the contract price can be described as a function of the contractual rule governing the transaction (Avraham and Liu 2006). This added level of complexity will be redundant in the present context, as the choice between performance and default, as well as the choice

At the time of contracting the parties know some future events may affect the value of performance relative to breach, but they do not know whether such events will indeed occur or not. The model allows for uncertainty both on the promisor side and on the promisee side (*see*: Avraham and Liu, 2006). The contract is assumed to be incomplete: it does not explicitly specify what is to be done if some of these events in fact take place. [20]

At the second stage, the promisee decides on the level of reliance. Let r be the Promisee's investment in reliance on the contract. The investment in reliance on the contract is intended to increase the value of performance for the promisee. Thus, the value of performance for the promisee is a function of reliance: $v(r)$. Diminishing returns are assumed for $v(r)$ so that $v'(r) > 0$ and $v''(r) < 0$.[21] It is also assumed that the investment is a profitable one, at least for some, sufficiently low, levels of r (there exists r so that $v'(r) > 1$). As the investment is in reliance on performance, in case the contract is eventually not performed any investment in r would result in a different return than the one represented by $v(r)$. Such return does not have to be zero, but will presumably be lower than $v(r)$. For instance, if the promisee's reliance is in buying some equipment that will be useful in case of performance, in case there is no performance she would presumably not be able to use it for its original purpose, but may still be able to sell it. Thus, the value of the investment in case of default is also a function of the level of reliance, and will be denoted by $v_d(r)$. In keeping with the

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regarding the level of reliance, is not affected by the contractual price under all four rules studied here. The reason for this is that under all rules 1-4, one party is assured the same level of profit in case of performance and default. In particular, if payment is made at the time of performance, this means the contract price is always paid, so the contract price does not constitute any difference between the option of performance and the option of default and does not affect the choice between the two. Similarly, if payment is conditioned on performance, the contract price is only paid in case of performance, but in case of default the amount of compensation will be reduced to reflect the fact the promisee is no longer required to pay the contractual price. Thus, also if the payment is conditioned on performance, it is essentially always paid, either directly or thought a reduction in compensation, and it again does not affect the choices made by the parties.

[20] For convenience, the model assumes the contract provides for no contingencies at all: it does not specify any future events under which performance is to be excused (or not excused). Conversely, if it is assumed some contingencies are explicitly provided for in the contract this will simply mean the analysis in the model is only relevant for the still infinite number of contingencies that are not explicitly mentioned in the contract. Contingencies will not be specifically provided for in the contract ax-ante, as long as providing for a specific contingency is not worthwhile considering its low probability. Note that even if the probability of each specific contingency not mentioned in the contract is low, the aggregate probability of all such contingencies may be high. Meaning, it might not be worthwhile to explicitly provide for many contingencies, even if it is quite likely the contract eventually will not be performed.

[21] In the example in the previous part the decision about reliance was structured as a simple binary choice: advertise or not advertise. The model here attempts to capture a more realistic dynamic, under which the promisee can choose between many different levels of investment (for instance: how much to invest in advertising, instead of just whether or not to invest).

notion that the investment in r is in reliance on the contract, and would not have been made absent the contract, it is assumed that $v_d'(r) < 1$.

At the third stage, additional information regarding the desirability of performance and breach may be revealed. At the time of contracting, and when decisions about reliance are to be made, the contract entails some degree of risk.[22] For instance, it might be that at the time of contracting only the probabilities for $v(r)$ are known: some future event might change the value of performance for the promisee in a way that would make performance redundant. Similarly, it might be that the cost of performance is not fully known at the time of contracting. Let the cost of performance by the promisee be c; after full information regarding this cost is revealed, it might be that performance is in fact wasteful. Also, the promisor might have alternative options: other profitable ventures she might want to pursue instead of performing the contract.[23] Such alternative options will be represented by a third-party offer, under which the promisor could default on the original contract and perform instead for a third party for the price of k_d. The costs of performance for a third party will be c_d, and may or may not equal c. Thus, the promisor might get an offer for the same

[22] The model assumes the parties are contracting under *risk*: they do not know whether certain events will occur, but they do know the *probabilities* of their occurrence. This assumption is sometimes criticized. For instance, Bayern and Eisenberg (2013, pp. 12-13) suggest that promisees cannot in fact know the probability of default. It might be therefore that the assumption of contracting under *risk* is unrealistic, and *uncertainty* is closer to reality: the parties know that future events might change the desirability of performance, but they do not know whether such events will indeed occur, and they also *do not know the probabilities* of such occurrence (Knight 1921, p.44; Smith 2004)). In the model, risk is assumed rather than uncertainty for the sake of simplicity. However, the results of the analysis hold also if uncertainty is assumed instead of risk. In terms of the level of performance, the analysis will be essentially identical: decisions about performance are made ex-post, after the parties know whether the events in question in fact occurred. Thus, the parties do not need to know the probabilities of future events: if such an event does indeed happen, they will then choose performance or default optimally, ex-post, under both Rule 1 and Rule 4. The analysis of reliance, however, will be slightly different: in deciding about the level of reliance, it was assumed the promisee considers the probability of default; under an assumption of uncertainty, this is, by definition, not possible. Under uncertainty, the promisee knows there is some possibility of default, but she does not know how probable it is. In this case, it is more difficult to describe the exact way in which the promisee will decide about the level of reliance. It can be said, however, that under expectation damages the promisee is free to ignore the possibility of default when deciding about reliance, as she is assured the same level of profits both in case of performance and in case of default. Conversely, under disgorgement, the promisee cannot ignore this possibility, as in case of default reliance will not result in any value increase. The promisee will therefore consider the uncertainty of performance, and rely accordingly, in much the same way she would do for any other uncertain venture. Thus, also under uncertainty expectation damages will result in over-reliance, and disgorgement will not. It is, however, more difficult to define "over-reliance" in this context, as the mechanism for describing the "optimal" or "natural" level of reliance is less clearly defined.

[23] The model assumes here full and symmetric information: At the time of contracting, both parties are equally aware of the possibility of breach. Similarly, at the time designated for performance, the parties have the same knowledge regarding the desirability of performance and breach. These assumptions are relaxed in part 4, when the possibility of asymmetric information is considered.

performance but for a better price ($c = c_d$; $k < k_d$) or an offer for the same payment for performance she can provide for a lesser effort ($k = k_d$; $c > c_d$).

At the fourth stage, the contract is either performed, or some payment is made in lieu of performance. This payment is denoted by d. The probability of default will be denoted by $P_{d,}$ and is determined by the probabilities of the different possible events that affect the desirability of performance, as well as by the different mechanisms for deciding about performance and default. To sum up:

k: contract price

r: investment in reliance on the contract by the promisee

$v(r)$: value of performance for the promisee as a function of reliance

$v_d(r)$: value of reliance for the promisee in case of breach

c: cost of performance for the promisor

k_d: price from third party

c_d: cost of performance for third party by the promisor

d: measure of damages

P_d: probability of default

The promisee invests in reliance on performance (r) and pays the contract price (k) to the promisor whether or not the contract is performed. Additionally, in case of performance, the promisee enjoys the benefits of performance ($v(r)$), and the promisor pays the costs of performance (c); in case of default, the promisee gets whatever the investment in reliance is worth now that the contract is not performed ($v_d(r)$) and a payment of damages (d) from the promisor, and the promisor may get an alternative payment from a third party (k_d) and bear the costs of alternative performance (c_d). With these notations, we can now describe the possible positions of the parties: In case of performance the promisee'e position will be denoted by v, and the promisor's by w. In case of default, their positions will be denoted instead by v_d and w_d. Therefore:

(1) $v = v(r) - k - r$

(2) $v_d = v_d(r) - k - r + d$

(3) $w = k - c$

(4) $w_d = k + k_d - c_d - d$

Any of the values $v(r)$, $v_d(r)$, c, k_d and c_d may be known at the time of contracting, or contain some risk or uncertainty, depending on the occurrence of a future event.[24]

Optimal levels of performance and default, as well as optimal levels of investment in reliance on performance, are defined according to the complete contract between the parties. The complete contract will specify contingencies under which the contract is not to be performed: cases in which the parties can derive greater joint value from not performing than they would derive from performance. Similarly, the complete contract will specify optimal levels of reliance: it will explicitly specify how the parties should make their expenditure in reliance on the contract, which actions are to be made in reliance on the contract, and which are to be avoided, considering the possibility of non-performance.[25]

3.1. The Complete Contract

3.1.1. Optimal Performance

Under the complete contract, the parties will prefer default over performance if the joint value from performance is lower than the joint value from default ($v + w < v_d + w_d$). Thus, from the parties' positions (1), (2), (3) and (4), we can see that the complete contract will provide for default whenever: $v(r) - k - r + k - c < v_d(r) - k - r + d + k + k_d - c_d - d$; Or:

(5) $v(r) - c < v_d(r) + k_d - c_d$

Note that the level of default under the complete contract does not depend on the contract price (k) or on the measure of damages (d);[26] the level of default does

[24] In this sense, it is possible to describe each of these as a function of a future event (Shavell 1980). Although illuminating generally, this added level of complexity will not change the results of the analysis here.

[25] In a world of zero contracting costs, where there is no limit to the parties' ability to contract, they will create a complete contract, and adhere to its terms always (Shavell 1980, p. 467). If the contract is complete, the parties will set a rule that will incentivize them to always act according to the contract. No action against the contract can be mutually desirable, so the parties will explicitly prevent it at the time of contracting by providing a remedy equivalent to specific performance. Thus, expectation damages are not a necessary part of the complete contract, despite what some scholars assume (Shiffrin 2009, p. 1556).

[26] The reason for this is that these are both payments made between the promisor and the promisee, and have no effect on the total value of the contract. Under the complete contract, the parties act to maximize the joint value of their agreement: any payments between them are not relevant to this task.

depend on the level of reliance (r), but only indirectly, as $v(r)$ and $v_d(r)$ are a function of r.[27]

3.1.2. Optimal Reliance

The complete contract would explicitly provide for reliance at a level that will maximize the expected total value of the contract for the parties at the time decisions about reliance are to be made. In doing so, the complete contract will consider the values of default and performance for the parties, as well as the probability of default. At the time of contracting, the joint value of the contract is: $(1 - P_d)(v + w) + P_d(v_d + w_d)$, so, together with the positions of the parties (1), (2), (3) and (4), the value of the contract is: $(1 - P_d)(v(r) - k - r + k - c) + P_d(v_d(r) - k - r + d + k + k_d - c_d - d)$, or:

(6) $(1 - P_d)(v(r) - c) + P_d(v_d(r) + k_d - c_d) - r$

The complete contract would have the promisee invest in r in order to maximize the contract value (6); differentiating (6) with respect to r and equating to 0 yields optimal reliance when:

(7) $(1 - P_d)v'(r) + P_d v_d'(r) = 1$

Simply put, this means the promisee should invest in r considering the possibility of default. After deriving optimal levels of performance in (5) and optimal levels of reliance in (7) according to the complete contract, we can now consider the decisions made by the parties in the reality of an incomplete contract.

3.2. Private Decision Making

The complete contract represents the joint interest of the parties under every possible contingency. Absent a complete contract, parties will make decisions independently, according to private rather than joint interests.

3.2.1. Performance and Default

If the promisor has the power to choose between performance and default, she will choose default when her position in case of default is better than her position in case of performance ($w < w_b$); together with (3) and (4) this means the promisor will choose default when: $k - c < k + k_d - c_d - d$; Or:

(8) $d < k_d - c_d + c$

[27] At the time of performance the investment in reliance on the contract (r) is already a sunk cost. This investment is made before the promisee knows if the contract will eventually be performed or not, and so appears both under v and v_d. When the choice between performance and default needs to be made, it is no longer relevant whether such an expense was made and to what extent. What does matter is the value of performance and default as a function of reliance: $v(r)$ and $v_d(r)$. It is also important if a third-party offer is available (The value of $k_d - c_d$).

In the same way, if the promisee decides about performance, she will choose default when this option is better for her ($v < v_d$); together with (1) and (2) this means the promisee will choose default when: $v(r) - k - r < v_d(r) - k - r + d$; Or:

(9) $d > v(r) - v_d(r)$

Note that the private decision about default (either by the promisor or by the promisee) depends directly on the measure of damages to be paid in case of default, and recall that the optimal level of performance under the complete contract does not depend on it.

3.2.2. Reliance

The expected value of the contract for the promisee at the time of contracting is: $(1 - P_d)v + P_d v_d$. Together with (1) and (2), this means the promisor will invest in r to maximize $(1 - P_d)(v(r) - k - r) + P_d(v_d(r) - k - r + d)$, or:

(10) $(1 - P_d)v(r) + P_d(v_d(r) + d) - k - r$

The promisee's decision about reliance depends on d, the measure of damages in case of default. Generally, private decisions made by the parties depend on the measure of damages paid in case of breach. The different decision-making mechanisms can be combined with different measures of damages to create different rules, which will result in different actions and choices by the parties.

3.3. Measures of Compensation

3.3.1. Expectation Measure

Under the expectation measure, damages are calculated so that the position of the *promisee* in case of default will equal her position in case of performance (d such that: $v = v_d$); Together with (1) and (2), we have: $v(r) - k - r = v_d(r) - k - r + d$; So under the expectation measure damages are:

(11) $d = v(r) - v_d(r)$

3.3.2. Disgorgement Measure

Under disgorgement rules, in case of default, the promisor pays the promisee any profits the promisor made by defaulting on the contract. More accurately, disgorgement is calculated so that the position of the *promisor* in case of default will equal her position in case the contract is performed (d such that: $w = w_d$); Together with (3) and (4), we have: $k - c = k + k_d - c_d - d$; so under disgorgement:

(12) $d = k_d - c_d + c$

We can now combine these two measures of compensation with the different ways of deciding about performance and reliance in order to create the four rules the model compares. The challenge is to find a combination of a measure of damages and a decision making method that will systematically result in both optimal levels of performance as well as optimal levels of reliance.

3.4. Rule 1: Expectation Call

3.4.1. Performance

Under the standard rule of expectation damages, the promisor decides about default (default when: $d < k_d - c_d + c$) and must pay damages so that the *promise's* position in case of default will be the same as her position in case of performance ($d = v(r) - v_d(r)$). Thus, from (8) and (11), under the expectation call rule the promisor will choose default when: $v(r) - v_d(r) < k_d - c_d + c$. This is also the optimal solution under the complete contract (recall (5)). The reason for this is that if the promisor chooses to default on the contract, she is made to pay for whatever value loss is suffered by the promisee as a result of default. This will induce the promisor to default only when her gains are greater than this loss, which is Pareto efficient.[28]

3.4.2. Reliance

Consider now the level of reliance the promisee will choose under this rule. When the promisee needs to decide about reliance, the value of the contract for the promisee is: $(1 - P_d)v(r) + P_d(v_d(r) + d) - k - r$. Under the expectation measure, $d = v(r) - v_d(r)$; so, from (10) and (11), the promisee will invest in r to maximize: $(1 - P_d)v(r) + P_d\,(v_d(r) + v(r) - v_d(r)) - k - r$, or: $v(r) - k - r$. The maximum is achieved when $v'(r) = 1$.[29] This means the promisee invests in r as if there is no possibility of default, based only on the value of reliance in case of performance ($v(r)$). Recall the under the complete contract, the optimal investment in r is up to the point at which: $(1 - P_d)v'(r) + P_d\, v_d'(r) = 1$, which reflects the possibility of default and the lower return of $v_d(r)$ that comes with this option.[30] This means that under expectation damages the promisee

[28] It is worth noting that the level of performance under this rule is only optimal *given the level of reliance*. As the level of performance might depend on the level of reliance, and reliance is over the optimal, performance under expectation damages might sometimes take place contrary to the optimal solution according to the complete contract.

[29] Any marginal addition to the promisee's investment in r after this point will result in a lesser addition to $v(r)$ (recall diminishing returns are assumed for $v(r)$).

[30] In keeping with the notion that the investment in r is in reliance on performance, $v(r)$ signifies a higher level of return relative to $v_d'(r)$. More accurately, at least for the relevant values of r, for which

will over-invest in reliance on performance: the promisee invests to maximize $v(r) - k - r$ while ignoring the possibility of default, even though this possibility should be considered under the complete contract. Naturally, ignoring the risk of a lower return ($v_d(r)$ rather than $v(r)$) will lead to over investment.[31]

These results exemplify the paradox of compensation: Since compensation in case of breach is measured according to the value of performance for the promisee, and since the value of performance for the promisee depends on the level of the promisee's reliance ($d = v(r) - v_d(r)$), the investment in r increases the value of default for the promisee, even though it does not increase the total value of the contract. In this way, compensating the promisee, which assures optimal levels of performance and default, also makes the promisee's profits in case of default depend on the level of reliance, causing the promisee to over-rely.[32]

3.5. Rule 2: Expectation Put

3.5.1. Performance

$v(r)$ signifies a valuable investment (when $v'(r) > 1$), and by the assumptions on $v_d'(r)$ (namely, that $v_d'(r) < 1$ for all r), any investment in r results in an increase in $v(r)$, and in a smaller increase in $v_d(r)$.

[31] More formally, it can be shown that expectation damages lead to a higher level of investment in r relative to the complete contract, by comparing the level of r chosen under the two regimes. To compare the level of r in the two cases, consider the levels of $v'(r)$ for the chosen level of reliance in each of them. Under expectation damages, the investment in r is up to the point in which $v'(r) = 1$. Under the complete contract, the investment in r is up to the point in which $(1 - P_d)v'(r) + P_d\, v_d'(r) = 1$, or: $v'(r) = (1 - P_d\, v_d'(r)) / (1 - P_d)$. Both P_d and $v_d'(r)$ are assumed to be smaller than 1, which means $(1 - P_d\, v_d'(r)) / (1 - P_d) > 1$. This means that under expectation damages the investment in r is up to a point in which $v'(r) = 1$, while under the complete contract the investment in r is up to a point in which $v'(r) > 1$. Since diminishing returns are assumed for $v(r)$, this means the value of r chosen by the promisee is greater under expectation damages than the level of r under the complete contract.

[32] The model does not account for the effects of potential costs of litigation on the parties' incentives. Such effects may seem relevant, as a central point in the model is that expectation damages "insure" the promisee against the losses of breach, and this feature of expectation damages leads to over-reliance under Rule 1. If the promisee incurs litigation costs in case of breach, and if the rule is that each party bears her own costs of litigation, then expectation damages in fact do not fully compensate the promisee. This, however, does not affect the incentive of the promisee to over-rely, and she will do so even if litigation costs are included in the model. Briefly, assume that in case of breach, the promisee has to pay litigation costs of l. In this case, under Rule 1 the value of the contract for the promisee, ex-ante, is: $(1 - P_d)v(r) + P_d(v(r) - l) - k - r$; so the promisee will invest in r to maximize $v(r) - k - P_d l - r$. The maximum is achieved when $v'(r) = 1$, which signifies the same level of investment as under the assumption of no litigation costs. The promisee still over-relies here ($v'(r) = 1$, instead of $(1 - P_d)v'(r) + P_d\, v_d'(r) = 1$) and ignores the possibility of breach. The reason for this is that the cost of l is incurred in case of breach, whether or not the promisee chose to invest in reliance on performance. This means this cost will not affect the decision about the level of reliance. Even though breach does not result here in the same level of profit for the promisee as performance does, the level of profit in case of breach still depends on the level of reliance in the same way it did when litigation costs were assumed away. Investing in reliance on performance will increase the promisee's gains both in case of performance and in case of default and this will incentivize the promisee to over-rely.

Under the expectation put rule, the promisee decides about default (default when: $d > v(r) - v_d(r)$) and the promisor must pay expectation damages in case of default ($d = v(r) - v_d(r)$). Thus, from (9) and (11) we see the promisee will never have an incentive to choose default under this rule, as $v(r) - v_d(r) > v(r) - v_d(r)$ cannot hold true. Damages under the expectation measure make the promisee indifferent to the possibility of default, so giving the promisee the power to choose between performance and default will not assure desirable results. There is nothing here that guarantees default and performance according to the condition set by the complete contract (default only when $v(r) - c < v_d(r) + k_d - c_d$).

3.5.2. Reliance

The value of the contract for the promisee is: $(1 - P_d)v(r) + P_d\,(v_d(r) + d) - k - r$, and $d = v(r) - v_d(r)$. Thus, from (10) and (11), the value of the contract for the promisee under the expectation put rule is: $(1 - P_d)v(r) + P_d(v_d(r) + v(r) - v_d(r)) - k - r = v(r) - k - r$; so the promisee will choose to rely in order to maximize: $v(r) - k - r$, and will invest in reliance up to the point at which $v'(r) = 1$. Rule 2, in the same way as Rule 1, leads to over-reliance.[33]

3.6. Rule 3: Disgorgement Call

3.6.1. Performance

Under this rule, the promisor decides about default (default when: $(d < k_d - c_d + c)$ and in case of default must pay the promisee all the profits made by defaulting ($d = k_d - c_d + c$). Thus, from (8) and (12), under the disgorgement call rule the promisor has no incentive to choose default (as $k_d - c_d + c < k_d - c_d + c$ cannot hold true). Since the promisor decides about default, but can make no profit from defaulting, she has no incentive to default when doing so is efficient.

3.6.2. Reliance

Consider now the promisee's decision about reliance. The value of the contract for the promisee is: $(1 - P_d)v(r) + P_d\,(v_d(r) + d) - k - r$, and the measure of compensation in

[33] It is worth noting that reliance under this rule may be *in specific cases* optimal, given the level of default. For instance, if we assume the promisee will never choose default (as she has no incentive to do so), the level of reliance may in fact be optimal given the level of default: the promisee invests in reliance on performance ignoring any possibility of default, and this is also the optimal level, as default really is not a relevant possibility. However, the level of reliance is not *generally* optimal given any level of default. Once there is even the slightest possibility of default, the promisee's level of reliance is over the optimal (given the level of default): the promisee will rely to the point at which $v'(r) = 1$, instead of $(1 - P_d)\,v'(r) + P_d v_d'(r) = 1$, ignoring the possibility of lower returns in case of default ($P_d v_d'(r)$).

case of default is: $d = k_d - c_d + c$. Thus, from (10) and (12), the promisee will invest in r to maximize: $(1 - P_d)v(r) + P_d\,(v_d(r) + k_d - c_d + c) - k - r$. After differentiating with respect to r and equating to 0, the promisee will invest up to the point: $(1 - P_d)v'(r) + P_d\,v_d'(r) = 1$. This is also the optimal level (from (7)).

3.7. Rule 4: Disgorgement Put

3.7.1. Performance

Under this rule, the promisee decides about default (default when: $d > v(r) - k - v_d(r)$) and in case of default the promisor must pay the promisee all the profits she made by defaulting: $d = k_d - c_d + c$. Thus, from (9) and (12), the promisee will choose default whenever: $v(r) - c < v_d(r) + k_d - c_d$, which is also the optimal level (from (5)).[34] The intuitive explanation here is simple: if the promisee can make the decision about default, and enjoys all the profits resulting from default, she will prefer default whenever the gains of defaulting are higher than the value of performance.[35]

3.7.2. Reliance

Consider now the promisee's decision about reliance. The value of the contract for the promisee is: $(1 - P_d)v(r) + P_d(v_d(r) + d) - k - r$, and the measure of compensation in case of default is: $d = k_d - c_d + c$. Thus, from (10) and (12), the promisee will invest in r to maximize: $(1 - P_d)v(r) + P_d\,(v_d(r) + k_d - c_d + c) - k - r$, which yields a maximum when $(1 - P_d)v'(r) + P_d\,v_d'(r) = 1$. This is also the optimal level of reliance (recall (7)).

[34] In order to assure optimal levels of performance and default, Rule 4 must, after allocating all default profits with the promisee, also assign the decision about default with the promisee. Brooks proposes what seems to be a rule similar to Rule 4, but then pulls back at this critical point (Brooks 2006, p. 582): Brooks suggests a rule that will in fact be a "dual choice" rule – first the promisor will indicate an intention to breach, and then the promisee will be able to authorize breach or refuse to do so. It seems Brooks opts for this rule as he perceives it to be more plausible procedurally; this rule, however, does not assure optimal levels of default, as it provides no incentive for the promisor to indicate breach and thus prompt the promisee to choose between default and performance.

[35] In order to induce efficient levels of default under Rule 4, it is not necessary that the promisee can directly order the promisor to engage in alternative performance; it would suffice that the promisee is able to initiate default, meaning, excuse performance according to the contract. The promisor will presumably then independently engage in alternative performance with third parties (if this is the reason default is desirable), in order to be able to make the payment required from her in lieu of performance. Arguably, leaving the promisor in a situation where she is forced, de facto, to contract with a third party is not only unfair but also problematic from a pragmatic perspective. However, the exact same problem may exist under the standard rule of expectation damages. Assume, for instance, that the promisor, a general contractor, is building a house for the promisee. Under the standard solutions of efficient breach, upon encountering a profitable opportunity the promisor can default and leave the promisee with no house, or with a partly built one. In such a case, the promisee will be effectively forced to contract with a third party in order to complete the project. Thus, as far as such difficulties are in fact significant, they exist under both Rule 1 and Rule 4, in different factual situations. Expectation damages presumably can be adjusted accordingly, to reflect the expenses of contracting with a third party; disgorgement payments should be adjusted in the same way.

Reliance here is optimal since the measure of d does not depend on r. When deciding how much to invest in r, the promisee only maximizes the elements that depend on r ($(1 - P_d)\ v(r) + P_d\ v_d(r)$), and not the payment made in case of default ($k_d - c_d + c$), which does not depend on r.

The investment in reliance on performance is optimal here since it only produces a profit increase for the promisee if the contract is indeed performed. Therefore, the promisee will consider the possibility of default when choosing the level of reliance. It does not matter whether the promisee's profit in case of default is higher than her profit in case of performance; as long as the promisee's profit in case of default does not depend on the level of reliance, the promisee will invest optimally.

This rule induces optimal levels of performance without making the promisse's position in case of default depend on the value of performance for the promisee, or on her level of reliance. Thus, this rule induces both optimal levels of performance and optimal levels of reliance, and offers a solution to the paradox of compensation.[36]

3.8. Rule 4 as a Solution to the Paradox of Compensation

In its most general form, the paradox of compensation points to a fundamental and universal problem: compensating victims is a desirable practice used to properly incentivize potential injurers, but at the same time problematic as it allows victims to ignore harms. This problem is sometimes mitigated by directly regulating the behavior of victims, and by limiting compensation if victims ignore potential harms in an inefficient way. This is regularly done it tort law using doctrines of contributory, relative or comparative fault (Cooter 1985), and perhaps to some degree also in the law of contracts where compensation is sometimes limited using the doctrines of

[36] Compared to the standard rule of expectation damages, Rule 4 grants a high level of protection to the promisee: the decision about performance is given to the promisee, and any profits resulting from default are disgorged to the promisee. Intuitively, one might expect a higher level of promisee protection to result in a higher level of reliance by the promisee – the more secure the promisee is, the more she can rely. This intuition reflects the assumption that under expectation damages promisees would fear that promisors may default even when defaulting is inefficient, if promisors are unaware of the value of performance to the promisee. If this is the case, expectation damages will indeed lead to under-reliance. In such cases, Rule 4 will lead to optimal reliance, as it can free the promisee from the fear of inefficient breach by the promisor. More generally, the analysis of Rule 4 demonstrates that, contrary to the basic premise of the paradox of compensation, a higher level of legal protection does not necessarily result in a higher level of reliance by the promisee (*Compare*: Cooter and Ulen 2012, p. 331).

foreseeability,[37] contributory fault, and the duty to mitigate damages.[38] While conceptually possible, this type of solution is costly and complex, and requires courts to conduct independent cost-benefit analysis to determine the desirability of the victim's conduct. In fact, it has been recently suggested that it would be practically impossible for courts to administer this type of solution in the context of the problem of over-reliance (Bayern and Eisenberg 2013, p. 12). In order to be able to limit compensation to a promisee who over-relied, the court would have to determine, ex-post, the optimal level of ex-ante reliance. This may be costly, if not impossible, especially since the optimal level of reliance depends on the actual level of performance, which is uncertain at the time of contracting. Another way to mitigate the costs associated with the paradox of compensation would be for the parties to contract more explicitly. This, however, is also costly, and not always possible. Conversely, the solution offered in the current paper avoids these costs: Rule 4 can assure optimal levels of performance and reliance, without the court directly regulating the levels of the parties' activity, and without the parties explicitly contracting for them.

Rule 4 can correctly incentivize injurers without compensating victims for harms, and creates efficient incentive for both without the need for the court to directly evaluate the desirability of their conduct. The concept of disgorgement is central to such mechanisms as it provides a point of reference that is relevant to the activity of the promisor without being directly affected by the actions of the promisee.[39] This type of solution may not be available or useful in all possible

[37] The doctrine of foreseeability is sometimes mentioned in the literature as a solution to the paradox of compensation in the contractual context. Inefficient reliance is supposedly unforeseeable, and promises who relied inefficiently will therefore receive only partial compensation (Cooter and Ulen 2012, p. 335). The connection between unreasonable reliance and unforeseeability seems, however, somewhat dubious. For instance, in the classic Hadley case, which first established the unforeseeability rule, the promisee received partial compensation since the harm was not foreseeable to the promisor, even though the promisee's reliance was probably efficient ex-ante. More generally, there is nothing preventing inefficient reliance from being easily foreseeable, as in the example given in part 2. It seems the doctrine of foreseeability, in the way it is currently employed by courts, is not designed to solve the paradox of compensations; rather, it is probably more helpful in solving other problems and in particular in facilitating communication between the promisee and the promisor (Bebchuk and Shavell 1999). Limiting compensations for unforeseeable damages can incentivize promisees to inform promisors of idiosyncratic value performance may hold for them.

[38] Doctrines of contributory fault can theoretically be used to limit compensation to over-relying promisees. However, the focus of these doctrines typically is not on the problem of over-reliance, but on different aspects of the promisee's behavior, such as failure to cooperate with performance (See generally: Schweizer 2005; Porat 2009; Ben-Shahar and Porat 2009).

[39] This type of solution may be relevant also in the context of tort law, see: Cooter and Porat (2014).

scenarios, but it does present a potential way of dealing with the paradox of compensation.

The paradox is born with the assumption that the only way to assure optimal levels of promisor performance is by compensating promisees for their expected profits; this, unfortunately, also creates over-reliance. The analysis here illustrates that optimal levels of performance are in fact obtainable without compensating promisees in this manner. This is achieved by allowing the promisee to enjoy the profits of default, which do not depend on her level of reliance. In this way, Rule 4 can offer a solution to the paradox of compensation in its basic contractual formation, as presented above. When the promisee can affect the profitability of performance through a unique investment in reliance on performance, and without assuming an advantage to any of the parties in terms of the ability to make an informed decision about breach, Rule 4 is superior to Rule 1 and assures both optimal levels of performance as well as optimal levels of reliance.[40] This, of course, does not mean Rule 4 will be optimal in every scenario, or that it will solve all possible manifestations of the paradox of compensation. The analysis of this rule does suggest, however, that we need to update our view of the paradox, as at least some supposedly paradoxical cases (and indeed central ones) are in fact solvable. Similarly, Rule 4 will not always be superior to Rule 1, but the fact that Rule 4 is sometimes superior to Rule 1 presents it as a valuable alternative. Even if neither rule is generally optimal, the ability to choose between the two and find the appropriate rule for specific cases or sets of cases, can improve efficiency overall.

4. DISCUSSION

This part studies the results of the analysis in part 3 in a more general way. The analysis here departs from the basic formation of the paradox of compensation to study cases in which either party may have an advantage in terms of knowledge about breach opportunities and the ability to develop them, and either party may be able to invest in reliance on performance. In such scenarios, either Rule 1 or Rule 4 may have an advantage. I open the discussion part by highlighting a central feature common to Rule 1 and Rule 4: Both Rule 1 and Rule 4 grant a high degree of control in the contract to one party. I then move on to consider the choice between Rule 1 and Rule

[40] If Rule 4 is superior to Rule 1, the total value of the contract is higher under this rule. This will presumably benefit both parties, through an appropriate adjustment in the price (Shavell 1980).

4 based on this general insight. In this context, it is shown that the choice between the two rules should depend on the relative ability of the parties to efficiently exercise this type of control over the contract. I end the discussion part by illustrating the potential usefulness of Rule 4 to contract adjudication, with the example of online consumer contracts.

4.1. The Residual Claim in the Contract: The Advantage of Rules 1 and 4

Both Rule 1 and Rule 4 can lead to efficient result by granting a high degree of control over the contract to one of the contractual parties. In this sense, both rules offer a type of a residual claim in the contract, assuring efficiency in a way other rules cannot. This is the reason Rule 1 and Rule 4 both have an advantage over the rule of specific performance. Under the rule of specific performance, neither of the two parties can unilaterally choose default over performance and neither has the ability to fully enjoy potential profits from default. The promisor cannot choose default (unlike under Rule 1), as the promisee can insist on performance; the promisee also cannot choose default (unlike under Rule 4) as there is no mechanism in place allowing her to do so. This rule does not give any one party sufficient control over the contract in a way that will assure efficient levels of performance and default.

Therefore, if default is profitable, the parties would have to arrive at a new agreement in order to realize the profits of non-performance. Each party would need the other party's consent in order to have the profits of default realized. The parties will negotiate the division of the new profits between themselves in a way that will assure mutual consent and enable realization of the new profit, while each party also struggles for a larger share. Note that while neither party can unilaterally assure herself the profits of default, either can unilaterally prevent the realization of these profits. Thus, the result of the negotiations, and the division of the profit between the two parties, will depend on the relative bargaining power of the parties under a bilateral monopoly. This may be inefficient, as negotiations for a new agreement can easily fail, or could be costly (Markovits and Schwartz 2011, p. 1942).

Conversely, under both Rule 1 and Rule 4, the full profits from default are already assured to one of the two parties (the promisor and the promisee respectively). Rules 1 and 4 in fact mark the outer boundaries of the bargaining game created under the rule of specific performance: Under Rule 1, the entire sum goes to the promisor; under Rule 4, it goes to the promisee. Both rules, in this sense, give a residual claim in

the contract to one of the parties: If circumstances since the time of contracting have changed in a way that extra profits are now obtainable through default, one party is able to fully capture these profits. This one party is the residual claimant, and is entitled to any extra profit remaining after the fixed claim of the other party is satisfied (Under Rule 1, the promisee's profits are fixed; under Rule 4, the promisor's profits are fixed). The availability of this type of residual claim makes the profits of breach potentially obtainable without the need for renegotiations.[41] This explains the appeal of both rules: they both grant a strong property-like right in the contract to one party, by allowing that party to exercise effective control over the contract and also enjoy the products of this control.[42] Constructing this type of residual claims is desirable, as it incentivizes efficient use of resources (Barzel 1997, pp. 3-9).

This also explains the main advantage of rules 1 and 4 over rule 3, the standard rule of disgorgement. Under rule 3, any extra profits resulting from breach are disgorged to the promisee, but the promisor is the one able to decide about breach. This leads to inefficient results, as the rule does not define a "residual claimant", and does not grant any one party sufficient control over the contract in a way that will assure optimal decision-making.

4.2. Allocating the Residual Claim: Choosing Between Rules 1 and 4

The contribution of the analysis of the model in part 3 is in demonstrating that there is more than one possible way to define a strong residual claim in the contract: it is possible to give a residual claim in the contract to the promisee, as well as to the promisor. The choice between Rule 1 and Rule 4 is analogous to a decision regarding

[41] Rogerson (1984) demonstrates that if renegotiations are costless, and if the promisee's position in renegotiations is such that all breach profits will go to her, then the rule of specific performance can lead to optimal levels of performance and reliance. In contrast, the analysis offered here suggests that Rule 4 can achieve the same result under the more realistic assumption that renegotiations are costly: Rule 4 essentially achieves the same result attributed to specific performance in Rogerson's model, without the need for renegotiations and regardless of their outcome. This advantage of Rule 4 is similar to advantages typically attributed to expectation damages. For instance, Markovits and Schwartz (2011, p. 1942) assert the superiority of expectation damages, as this rule can assure optimal levels of breach without the need for renegotiations. The present model suggests that disgorgement based rules can also be designed to achieve this result.

[42] This solution provides for unity of ownership and control, thus avoiding agency costs. The general problem of agency costs exists also in contract law, as the promisor controls the promisee's interests. Many parts of contract law can be explained as attempts to mitigate the effects of this problem. Strengthening the ability of owners to control their assets is generally desirable as a way to reduce agency costs (Fama and Jensen 1983; Bebchuk 2005). In this sense, Rule 4 can also find support in the writings of moralistic scholars who emphasize the ownership of the promisee in contractual performance (Gold 2009).

the assignment of the residual claim between the two parties. Conventional wisdom informs us that it is desirable to give the residual claim in an asset to the party more able to control it, or, in particular, to the party more able to affect the asset's productivity (Smith 2004, p. 1719, 1796). Allocating the residual claim in this way will assure efficiency, and optimal use of resources. Thus, whichever party is more able to affect the profitability of the contract, should be the residual claimant.

Apparently, as can be learned from the prevalence of the "efficient breach theory" (Markovits and Schwartz 2001; Shavell 2006; Posner 2009), and from the ongoing defense of expectation damages as an efficient remedy, it is quite commonly assumed that the promisor is generally most able to affect the profitability of the contract, and thus naturally more suited to be the residual claimant. This is presumably based on the assumption that the promisor is better situated to choose between performance and default, and to seek out breach opportunities. And indeed, this choice is one way in which parties can affect the profitability of their joint venture. However, as emphasized by the paradox of compensation, the parties also affect the profitability of the contract through investment in reliance on performance. The allocation of the residual claim should thus be determined not only based on the ability to affect the profitability of the contract through default, but also based on the ability to affect the profitability of the contract through reliance.

Assume that in much the same way that the promisee can invest to increase the value of performance, the promisor can invest to lower the cost of performance ahead of time (by training employees, buying manufacturing equipment etc.).[43] Thus, both the promisee and the promisor can invest in reliance on the future performance. Assume also that each party has different information regarding the desirability of breach under different contingencies. Generally speaking, it would be desirable to give the residual claim in the contract to the party who is more able to affect its profitability through reliance, and better informed regarding the desirability of default relative to performance. Surely, consideration relating to the level of performance and considerations relating to the level of reliance will sometimes point in the same direction, and will sometimes clash. Also, an advantage to one party in terms of the

[43] Despite what the model in part 3 may suggest, performance will rarely take place in one single moment. Instead, performance, or activities required to enable performance, might be performed over time. This can be conceptualized either as performance in stages (Porat 2004) or as reliance by the promisor in preparation of performance (Shavell 1980). While theoretically distinct, it is not always clear if the two alternatives are distinguishable in reality, and which explanation provides a more convincing account of business practices.

ability to affect profitability through reliance or default should not always matter, if the parties are able to decide jointly about the optimal level of activity in this context: This may be possible through renegotiations for performance and default, and also through explicitly contracting for reliance. The choice between Rule 1 and Rule 4, according to these general considerations, is described in more detail in the following sections.

4.2.1 Performance and Default

Generally speaking, if one party is more able to decide about default, this should be considered in favor of making that party the residual claimant. This section substantiates this general notion by considering the relative ability of promisors and promisees to make such a decision in different contractual contexts.

Consider the information parties would typically have regarding breach opportunities and the desirability of breach relative to performance. In cases of third-party offers, promisors might typically have better information regarding the existence and value of breach opportunities, in a way that would support giving the residual claim in the contract to them. However, this advantage is context dependent. For instance, in contracts between merchants it is less appropriate to assume sellers (or promisors) would have better information regarding opportunities for alternative sales, assuming that buyers (or promisees) in any event intended to resell the goods.

Additionally, the parties' relative ability to make an informed decision about breach would depend on the reason breach is profitable. For instance, if default is efficient because the value of performance for the promisee has significantly dropped since the time of contracting, and is now lower than the cost of performance, promisees would typically be more able to know this. In such cases default is preferable without the existence of any third-party offer, so the promisee rather than the promisor is presumably better situated to ascertain the desirability of default, and should be made the residual claimant. Thus, the choice between Rule 1 and Rule 4 might be affected not only by the type of the contract, but also by the type of breach. In commercial contexts in which the value of performance for promisees may vary significantly, this should be considered in favor of giving the residual claim to them. Note that even in cases of a third-party offer, information regarding the value of a third-party offer is not sufficient basis for an informed decision about breach, as the value of performance for the promisee must also be known (Bebchuk and Shavell 1999). Promisees will typically have better access to that kind of information (Zamir

2012). Generally, information advantages in terms of the choice between performance and default are context dependent, and in different contexts different parties would be more suitable to be the residual claimant.

4.2.2 Renegotiating Performance

Generally, it is desirable to give the residual claim to the party more able to make an informed decision about default. This party will then use her information advantage to assure efficient levels of performance and default. However, even if the residual claim is given to the party less able to make an informed decision about default, efficient levels of performance may still be attainable, if renegotiations at the time of performance are cheap and likely to result in a new agreement. The better informed party could offer to buy the residual claimant's consent to default, and the residual claimant will allow default, presumably for some share of the potential profits attainable through default. This means that an information advantage to one party regarding the decision about breach should affect the allocation of the residual claim mainly if renegotiations are expected to be costly. When renegotiations are costly, giving the residual claim to the party less able to make an informed decision about default might lead to inefficient levels of performance and default, or necessitate costly renegotiations to assure efficient results.[44]

If renegotiations are low-cost, or even costless, information advantages regarding default opportunities should not significantly affect the choice between Rule 1 and Rule 4. However, the choice between the two rules should still take into account the effect on the level of reliance. The reason for this is that if the residual claim is not given to the party who is able to rely on the contract, this will encourage that party to over-rely even if optimal levels of performance and default are obtainable through renegotiations. Assume, for instance, that renegotiations at the time of performance are costless, the seller is more able to decide about breach, and the buyer can invest in reliance on performance. If the residual claim is given to the seller (under Rule 1), the seller will breach whenever this is profitable, but will then compensate the buyer for her harms, making the buyer indifferent to them and allowing the buyer to over-rely. Rule 4 will prevent this inefficient result, and thus be superior to Rule 1. Under Rule 4, the promisor, who has an information advantage

[44] Note that even if renegotiations are possible, Rules 1 and 4 still maintain some advantage over the rule of specific performance. Under both Rule 1 and 4, negotiations will be necessary only if the residual claim is wrongly allocated, and given to the less informed party. Conversely, under the rule of specific performance, renegotiations will always be necessary before profitable breach will be possible.

regarding the desirability of default, is not given the residual claim, but this is not a problem, as optimal levels of default and performance will be assured through renegotiations. Additionally, the level of reliance will also be optimal under Rule 4, as investment in reliance on performance will not increase the promisee's profits in case of default. The different rules thus still differ in the level of reliance they induce, even if the possibility of renegotiations makes them identical in terms of the created levels of default.[45] This means that even if renegotiations are costless, the choice between the different legal rules might still matter, based on considerations of reliance, and that it would be advantageous to give the residual claim to the party able to affect the profitability of the contract through investment in reliance on performance.

4.2.3 Reliance

Generally, a party's ability to influence the value of performance through different investments should not always be considered in favor of giving that party the residual claim in the contract. This is because even if a party is able to invest in this way, it might be that this investment is not unique to the specific contract. If the investment is not unique to the contract (at least somewhat) this would suffice to incentivize the relying party to invest optimally, regardless of the legal rule controlling the contract. For instance, if a buyer can invest in equipment that will help her sell goods she expects to receive from a contractual seller, but this same equipment will be just as useful in selling alternative merchandise in case the original contract is breached, then the buyer will invest optimally in this equipment even if she is not given the residual claim in the contract: The equipment is equally useful in case of performance and in case of breach, so the buyer will invest ignoring the possibility if breach (which is indeed irrelevant) under both Rule 1 and Rule 4. Thus, the identity of the residual

[45] Since the different rules create different levels of reliance, the choice between them can also change the parties' bargaining position in renegotiations. This is another reason to give the residual claim to the party more able to affect the profitability of the contract through reliance, even if optimal levels of default are assured through renegotiations. To illustrate, consider again the contractual setting described in the section above. In this case, the buyer may have another incentive to over-rely under Rule 1: The promisee is incentivized to invest strategically in order to improve her bargaining position in case of renegotiations. This is a wasteful investment, as it is not designed to increase the value of performance. The strength of the buyer's bargaining position in renegotiations depends on the credible threats available to her. If the buyer is not the residual claimant, an added investment in reliance on performance increases the buyer's profits in case of performance *and* in case of breach. This means that the more the buyer relies, the more credible is her threat to refuse a new agreement at the time of renegotiations (as her position without a new agreement is improved the more she relied). This means Rule 1 may incentivize the buyer to invest in reliance on performance simply to secure a larger share of the profits for herself in case of renegotiations. Conversely, if the buyer is the residual claimant, an added investment in reliance on performance does not unequivocally improve her profits in case there is no new agreement, so it improves her bargaining position in a less obvious way.

claimant should be determined based on considerations of reliance only if the investment is unique to the contract. This means, for instance, that parties who are routinely involved in many contracts of the same type should not usually be given the residual claim based on considerations of reliance. Conversely, one-time contractual players are more likely to make investments that will not be useful for them if the contract is not performed, so it would make more sense to give them the residual claim. This also makes intuitive sense: One-time players are more dependent on the specific contract than repeat players (who presumably have more contractual alternatives) and it would make sense to therefore give them more control over the contract.

The importance of considerations relating to the level of reliance is also affected by the parties' aversion to risk. Generally, the more risk averse the parties are, the more important considerations of reliance become. Assume the promisee can invest to change the value of performance, but is not the residual claimant. The promisee is thus free from the risk of this investment, and this would shift the risk from the promisee to the promisor. The more risk averse the promisee is, the more this will distort her incentives, and the more risk averse the promisor is, the greater this cost will be for her. Thus, if the parties are averse to risk, it would be more important to consider their relative ability to make specific investments in reliance on performance when deciding the allocation of the residual claim.[46]

4.2.4 Contracting for Reliance

Considerations relating to the level of reliance are less important, or can even be ignored, if the parties are able to explicitly contract for the level of reliance. For instance, in a complex deal between sophisticated parties, it is quite likely the contract will meticulously describe most, if not all, significant actions expected to be undertaken in connection with the contractual performance. This ability will be limited, even for sophisticated parties, if the nature of the project is highly fluid. Alternatively, if one of the contractual parties is a consumer, it will be virtually impossible to have the contract reflect the optimal level of reliance by the promisee,

[46] Of course, if the parties are risk averse, and have different degrees of risk aversion, they might use the contract to shift risks between themselves to whichever party is less averse to risk. For instance, if the promisor is less risk averse, it might be desirable to make her the residual claimant, and to use expectation damages as a form of insurance for the promisee against the risk of default (Shavell 1980, p. 487).

as a consumer has no real ability to use a standard contract to articulate her specific preferences.

Note that instead of contracting directly for the level of reliance, the parties can agree on liquidated damages as another way to avoid the problem of over-reliance. This is quite easy to do. Under liquidated damages, the promisee receives a set sum in case of default; whatever this sum is, it does not depend on the level of reliance by the promisee. This means the investment in reliance on the contract will only be profitable in case the contract is indeed performed, and the promisee will thus rely optimally. However, it would be a lot more difficult to set liquidated damages to assure also optimal levels of default. To do that, it would not suffice to set liquidated damages for just any amount, but it would be necessary to set them at the value of performance for the promisee, under the optimal level of reliance. This is in fact quite similar, in terms of complexity of the required information, to contracting explicitly for the optimal level of reliance. Setting liquidated damages at the optimal level may be possible, thought costly, in some cases, but will often be impracticable. Thus, if the value of performance for the promisee is uncertain, if many forms of investment to alter this value are possible, or if there is little reason to assume the promisee is at a position to express this value,[47] there is no reason to assume liquidated damages reflect the value of performance for the promisee under the optimal level of reliance. As long as liquidated damages are not set at this amount, default would happen too often (if damages are set to low) or not often enough (if damages are set to high). In this sense, it is easy to use liquidated damages to solve the problem of over-reliance,[48] but difficult to use them to solve the paradox of compensation. More generally, the need for optimal contract remedies is lessened the more the parties explicitly contract for, and liquidated damages are one way for them to do so. But setting liquidated damages optimally is costly, like any other form of contracting; as long as the parties cannot contract for all possible contingencies, their actual contract, as well as liquidated damages, cannot achieve optimal results.

[47] This is probably the case with consumer contracts, which are typically not even read by promisees (Ben-Shahar 2009).

[48] Note that liquidated damages can lead to optimal levels of reliance only *given the level of default*. Since the optimal level of reliance depends on the level of default, and since liquidated damages will not typically assure optimal levels of default, the level of reliance created under liquidated damages will be optimal given the level of reliance, but will not be the optimal level overall according to the complete contract.

In sum, the desirability of different assignments of the residual claim can be affected by different elements in different situation. Sometimes, considerations relating to optimal levels of performance and default should be more central to the decision, and sometimes consideration relating to the optimal level of investment in reliance on performance would be more important.

4.3. The Reality of Adjudication: Can Courts Use Rule 4?

To operate Rules 1 and 4, a court would need to know the measure of d, the payment made to the promisee in case of default. In order to be able to operate Rule 1, a court would need to be able to verify the value of performance for the promisee (as $d = v(r) - v_d(r)$); in order to operate Rule 4, a court will need to know the value of default for the promisor (as $d = k_d - c_d + c$). In different context, either may be more easily verifiable, and this should be considered in the framework of the choice between the two rules. In the complex reality of contract adjudication, courts will often be unable to determine either the true measure of expectation damages or disgorgement of profits. More often than not, the only easily verifiable value would be the market price of performance, and market price therefore affects the actual measure of compensation more than any other factor (Thel and Siegelman 2011).

Interestingly, in different situations, market price may reflect either the value of performance for the promisee or the value of breach for the promisor. For instance, if the promisee is able to sell the goods at market price, or is able to get a perfect substitute for market price, then market price reflects the promisee's expectations; if the promisor can sell the goods for market price, compensation measured by market price reflects disgorgement of profits. This means, very generally, that compensation is often given according to the value of performance for the party that has a less of an idiosyncratic valuation of the specific bargain. This can actually fit nicely with the considerations for choosing between Rule 1 and Rule 4 as outlined in the previous sections, and especially with the need to separate the measure of compensation from the value of performance for the party more able to uniquely rely on the specific contract.

To illustrate this point, and the way it relates to the usefulness of giving the residual claim in the contract to the buyer, consider the example of an online consumer contract. Imagine, for instance, that a person is buying a gadget on Amazon. The assumption is that the seller is a repeat player and sells many identical

gadgets, while the buyer is a one-time purchaser. Who should be given the ability to forgo performance in such a case, and what compensation should be paid if the contract is not performed?

The market price of the gadget is known. The specific value of the gadget for the purchaser, however, is relatively hard to determine, and may or may not equal market price. The purchaser presumably has limited access to the market as a potential seller, and will not necessarily be able to sell the gadget for market price. The value of the gadget for the purchaser depends on its intended use, and on the purchaser's ability to find a suitable substitute in case of breach (which will also depend on any time sensitivity in the intended use). Conversely, the value of the gadget for the seller is quite easy to determine, and would probably equal its market price. The seller has easy access to the market, and can sell the gadget for this value. This means that in this case compensation measured according to market price is closer to represent the measure of disgorgement, and does not represent expectation damages.

In terms of the level of performance, the seller will not typically have a significant information advantage regarding breach opportunities, as breach following a third-party offer is unlikely. If there is a third-party offer to buy the same gadget for a higher price, presumably the seller can sell a different gadget and would not need to breach and use the specific gadget promised to the buyer (assuming the seller routinely makes many similar sales). Conversely, profitable breach is more likely on the promisee side. It could be that the promisee finds out she in fact has no use for the gadget after all, or she might find a cheaper product that can provide her with the same advantages. This pushes for giving the promisee, rather than the promisor, the ability to choose between performance and no performance.

In terms of the level of reliance, the promisor cannot significantly change the value of this specific contract by investing in reliance on performance. Of course, the seller makes many investments in advance to enable performance, but such investments are probably not unique to this specific transaction (again, by the assumption the seller is involved in many similar contracts). Conversely, the promisee is more likely to rely specifically on the contract (even though this will not always be the case). The promisee may have a variety of plans regarding the use of the gadget, or may be buying any number of other products to use together with it. This means

that basing compensation on the value of performance to the promisee may be problematic, as it would encourage the promisee to over-rely.

In sum, since the value of default for the seller is fixed and easy to know, and the value of performance for the buyer is fluid and difficult to verify, it would makes more sense to make the buyer the residual claimant. This is done by basing compensation on the value of default to the seller, and allowing the buyer to decide if the contract will be performed or not. This will more likely assure optimal levels of performance and default, as well as help avoid the problem of over-reliance. This is also quite easy to do, based on the easily verifiable market price of performance.

It seems the considerations outlined here are relevant to consumer contracts quite generally: it is more efficient to make one-time consumers, rather than repeat sellers, the residual claimants. Interestingly, this is also the common contractual solution in standard consumer contracts. The specific value of performance for the promisee is rarely relevant in such cases, compensation will be based on market price, and the buyer typically has the option (by contract or by law) to forgo performance by the seller (Ben-Shahar and Posner 2011).

This general category of cases exemplifies the potential usefulness or Rule 4, and of the ability to give the residual claim to promisees rather than promisors. When the contract is standard from the promisor's perspective, but unique for the promisee, expectation damages are hard to calculate, and will not assure optimal levels of reliance and performance. Giving the residual claim to the promisee is easier to implement, as the value of the contract to the promisor is known, and will also leave the promisee with efficient incentives to manage her idiosyncratic preferences regarding the contract.

5. CONCLUSION

The model used in this paper compares different contract rules in terms of their ability to induce optimal levels of contract performance and investment in reliance on contractual performance. The standard rule of expectation damages (Rule 1) is contrasted with the disgorgement put rule (Rule 4). Under the assumptions made in the model, the standard rule exemplifies the paradox of compensation: the same features that allow the rule to induce optimal levels of performance and default also induce inefficient levels of reliance. The disgorgement put rule, however, assures

optimal levels of contractual performance without distorting incentives for promisee reliance and thus offers a solution to the paradox.

The disgorgement put rule assures optimal levels of default by giving the promisee the power to forgo performance and also the ability to enjoy the benefits of non-performance. This incentivizes her to excuse performance whenever doing so is potentially profitable, without making her profits in case of breach depend in any way on her investment in reliance on performance. In this way, this rule assures optimal levels of default without distorting the promisee's interest in relying optimally, as reliance is profitable for the promisee only in case the contract is eventually performed.

These results are somewhat counterintuitive and their general implications are discussed. I demonstrate the advantage of Rule 1 and Rule 4 over other contract rules and describe the considerations affecting the choice between these two rules. Both rules share some desirable features but also differ in the ways they operate and in the mechanisms they employ to assure optimal levels of performance, default, and reliance. Introducing Rule 4 as a possible alternative to Rule 1 allows for more flexibility in the design of contract remedies. If Rule 4 has advantages over Rule 1 in some cases, the ability to choose between them in different contexts can help achieve more efficient results overall.

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