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MARKET DAMAGES, EFFICIENT CONTRACTING, AND THE ECONOMIC WASTE FALLACY

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Market damages are the best default rule when parties trade in thick markets: They induce parties to contract efficiently and to trade if and only if trade is efficient, and they do not create ex ante inefficiencies. Courts commonly overlook these virtues, however, when promisors bundle services that are not separately priced. For example, a promisor may agree to pay royalties on a mining lease and later to restore the promisee's property. When the cost of completion is large relative to the "market delta"—the increase in market value—courts concerned with avoiding "economic waste" limit the buyer to the market value increase. This concern is misguided. Since the buyer commonly prepays for the service, a cost-of-completion award actually has a restitution element—the prepaid price—and an expectation interest element—the market damages. Courts fail to see the restitution issue and thus deny these damages more frequently than they should. We argue first that the rule denying buyers market damages induces excessive entry into these service markets. Second, buyers are undercompensated when they pre-pay and cannot recover the price paid for the breached services. Finally, sellers often can take actions in the interim between making the contract and the time for performance of the service that would reduce the service cost to manageable proportions. Sellers are less likely to take these precautions if they are required to pay buyers only the market delta, rather than the full performance cost that their actions could have avoided.

INTRODUCTION

Contract theory identifies three central goals that the law should pursue in facilitating efficient contracting. Initially, the law should maximize the probability that parties will contract when contracting would create gains in excess of costs. For example, when parties contract to perform services, the buyer expects to earn the difference between the value he will realize from performance and the contract price, and the seller expects to earn the difference between the price and her costs.[1] Protecting these expectations at the contracting stage maximizes the probability that the parties will contract when each of their gains exceeds contracting costs. Thereafter, the law should create an incentive for the parties to invest in the relationship in order to maximize the joint expected surplus. Here, the law should select a damage measure that does not induce the buyer to invest excessively in reliance in order to increase his litigation return. Finally, the law should create an incentive for the parties to trade[2] when the buyer values performance in excess of the seller's costs.

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1. We use the term "seller" to denote a promisor who has contracted to perform services, and the term "buyer" to denote the promisee who has agreed to pay for those services. In the cases we focus on, a seller may be a mining company that fails to restore property as promised at the conclusion of its lease, or a conventional builder under a construction contract who breaches a promise to repair defects in construction. We focus primarily on buyer remedies in this Article, but much of what we say applies to sellers as well.

2. Contract theory distinguishes between "contract" and "trade." A buyer efficiently contracts when his expected value from performance exceeds the price. A buyer efficiently trades (i.e., either performs the contract with the seller or, upon the seller's breach, purchases a substitute on the market) when his actual value from performance exceeds the seller's realized cost of performance. Similarly, a seller efficiently contracts when the price exceeds her expected cost, and she efficiently trades when the buyer's value is above her realized cost.

To achieve these goals, contract law commonly selects the "market damage" measure whenever there is a market for substitutes. This measure specifies damages as the difference between the market price for goods or services at the time of breach and the contract price. In certain service contexts, however, courts believe that full market damages would overcompensate the buyer. Courts equate overcompensation with "economic waste" and reduce the buyer's damages accordingly. This Article argues that market damages are always the preferable damage measure when a market for substitutes exists, even in circumstances where courts today believe that these damages would constitute economic waste.

It is tempting to argue that direct measures of the buyer's expectation are preferable to market damages because these measures precisely implement the law's goal. Thus, for example, direct expectation damages award the buyer the exact difference between his value and the contract price. Direct damage measures have two undesirable properties, however. First, it is often difficult to verify the value that a buyer would have realized had the seller performed.[3] Courts cannot award direct expectation damages when they cannot measure the expectation. Second, direct expectation damages protect the buyer's expectation given the investment the buyer made in the contract. As a consequence, they create an incentive for the buyer to invest excessively when, as is often the case, the seller cannot observe the buyer's reliance actions.[4] These two difficulties create incentives for parties to contract out of direct expectation damages; and indeed, consequential damage exclusions are ubiquitous.

The difficulties with direct expectation damages may be avoided by protecting the buyer's expectation with specific performance. This remedy gives the buyer what he expects at the price he agreed to pay. Specific performance also makes low informational demands on the trier of fact because she need not recover the buyer's valuation.[5] Specific per-

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3. The common law foreseeability and certainty limitations on awarding full expectation damages increase the cost of proving damages and thus exacerbate the verifiability concern. See, e.g., Freund v. Wash. Square Press, Inc., 314 N.E.2d 419, 420–22 (N.Y. 1974) (illustrating common law foreseeability and certainty limitations on direct expectation damages); Hadley v. Baxendale, (1854) 156 Eng. Rep. 145, 147 (Ex.) ("The debtor is only liable for the damages foreseen, or which might have been foreseen, at the time of the execution of the contract . . . ."). For discussion, see Robert E. Scott & Jody S. Kraus, Contract Law and Theory 951–68 (4th ed. 2007) [hereinafter Scott & Kraus, Contract Law].

4. Under an award of full expectancy, a buyer's payoff is his realized valuation from performance. As a consequence, the buyer has an incentive to increase that valuation if he can. When the seller cannot observe what the buyer does, a buyer who can affect value will invest in the subject matter of the contract until his marginal gain equals his marginal cost. This investment level is too high because the buyer does not consider that in some ex post states (when the seller would incur high costs) performance would be inefficient. In these states, the buyer's investment is useless, so his investment costs are a social waste.

5. This virtue may be overstated when the seller's performance is complex; then a court may have difficulty identifying the set of performance tasks that would maximize the buyer's value.

formance, however, also has two undesirable properties. First, circumstances may change materially between the time of contracting and the time of performance. If the parties at performance time are not symmetrically informed about values and costs, they may be unable to agree on a modification of their contract that directs the efficient outcome. If renegotiation fails, a court may compel the seller to perform under the original, inefficient contract.[6] Second, and of greater significance, specific performance requires a court order and is discretionary.[7] Court orders commonly take a long time to obtain and, when granted, may require the court to police performance by the seller. Specific performance thus is not a realistic option for buyers who require either a prompt or a difficult-to-supervise performance.[8] Since many buyers prefer prompt performance or prefer not to deal with reluctant sellers, specific performance is sought no more frequently in jurisdictions where the remedy is available as of right than it is sought in the United States, where the remedy is discretionary with the court.[9]

Market damages protect the buyer's expectation interest indirectly, but without the undesirable properties that accompany the other reme-

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6. In addition, to a lesser extent than direct expectation damages, but to a positive extent nevertheless, a buyer's payoff under specific performance is a function of his investment, so he will be induced to overinvest. See, e.g., William P. Rogerson, Efficient Reliance and Damage Measures for Breach of Contract, 15 Rand J. Econ. 39, 47 (1984) (concluding that under expectation damages buyers will choose a greater-than-efficient level of reliance).

7. See, for example, U.C.C. § 2-716(1) (2001), which provides that a court may award specific performance where the goods are unique or "in other proper circumstances." The vague standard of "other proper circumstances" gives courts in sales contexts substantial latitude in deciding whether or not to issue specific performance decrees. See Klein v. PepsiCo, Inc., 845 F.2d 76, 80 (4th Cir. 1988) (reversing trial court's finding that buyer's inability to cover his loss was an "'other proper circumstance'" favoring specific performance). Courts have the same discretion over service contracts. See Restatement (Second) of Contracts § 357(1) (1981) ("[S]pecific performance of a contract duty will be granted in the discretion of the court . . . .").

8. Injunctions can moderate the problem of delay. Buyers who have a right to specific performance are entitled to apply for preliminary injunctions or "injunction[s] against breach." See, e.g., U.C.C. § 2-716 cmt. n.1; Restatement (Second) of Contracts § 357(2) (1979). Common observation suggests, however, that preliminary injunctions rarely are granted.

9. Henrik Lando & Caspar Rose, The Myth of Specific Performance in Civil Law Countries 18–19 (Copenhagen Bus. Sch., Working Paper No. 2003-14, 2003). One response courts have fashioned to the temporal problems with the specific performance remedy is to award "monetary specific performance"; that is, the proceeds received by the breaching seller when the contract goods or services are sold to a third party. However, sellers who breach often do not resell. Moreover, monetary specific performance suffers from the same verification difficulties as direct expectation damages. Perhaps for this reason, courts increasingly decline to grant monetary specific performance. See, e.g., Bander v. Grossman, 611 N.Y.S.2d 985, 990 (Sup. Ct. 1994) (denying specific performance for breach of contract for sale of rare car). For discussion, see Scott & Kraus, Contract Law, supra note 3, at 884–85. Parties can internalize the costs of the two problems with specific performance described above. Hence, courts should enforce contracts that authorize specific performance.

dies. A buyer who purchases a substitute for the breaching seller's performance and then recovers as damages the difference between the price he paid and the contract price obtains the performance he wanted at the contract price. Market damages also make relatively low information demands on the trier of fact. A court must know only the contract price and the cover or repurchase price, both of which are commonly verifiable. The seller also knows these values. Hence, under market damages she can make an efficient decision regarding whether or not to perform. In addition, market damages do not require courts to supervise complex performances, nor do they confront buyers with the difficult choice either of waiting too long for a remedy or of having no remedy at all (when their valuations are unverifiable). The buyer can purchase a substitute performance promptly and recover from the seller later. Finally, market damages do not create moral hazard: The buyer cannot increase his legal award by the reliance actions he takes after the contract is made.[10] As real world evidence of these virtues, parties seldom contract out of the market damages rule when they can purchase substitute performances.[11]

Market damages, however, are widely believed to have a serious defect when the seller is providing a service. In service cases, buyers commonly sue for the "cost of completion"—the cost of purchasing a substitute performance in the market. But sometimes the cost of completion greatly exceeds the gain in the market value of the buyer's property that the seller's performance would have produced. Since other sellers will have similar costs to those of the contract seller, awarding cost-of-completion damages in these cases was once thought to subsidize "economic waste."[12] The buyer could use the damages to purchase a performance whose cost greatly exceeded its value. This putative danger is primarily present in construction contexts.[13] In a typical case, such as *Jacob &*

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10. The buyer's payoff under market damages is a function of the contract price, which has been set before the buyer chooses an investment level, and the ex post market price, which the buyer cannot affect. As a consequence, market damages make the buyer the residual claimant of his reliance investment: He realizes all of the gains and bears all of the costs. Consequently, the buyer will be sensitive to the possibility that performance will sometimes be inefficient, and that when it is, his reliance costs will have been wasted. This realization will temper overreliance.

11. A search of the Contracts Library of the Contracting and Organizations Research Institute at the University of Missouri-Columbia, http://ronald.cori.missouri.edu/cori_ search/, reveals no contracts in which the parties sought to opt out of the market damages default other than those contracts in which all damages default rules are displaced by a liquidated damages clause. This reflects the historical preference of the common law for market damages whenever an available market for substitutes exists. See Robert E. Scott, The Case for Market Damages: Revisiting the Lost Profits Puzzle, 57 U. Chi. L. Rev. 1155, 1160–63 (1990) [hereinafter Scott, Market Damages].

12. See cases cited infra notes 13, 14, 45, 47 and accompanying text.

13. While the "economic waste" doctrine is limited to contracts for services, the analogous issue of overcompensation arises in sales cases as well. See, e.g., Allied Canners & Packers, Inc. v. Victor Packing Co., 209 Cal. Rptr. 60, 64–66 (Ct. App. 1984) (limiting buyer of goods to "lost profit" rather than awarding market damages based on market price at time for performance). For discussion, see Scott, Market Damages, supra note 11,

Youngs, Inc. v. Kent,[14] a contractor has deviated from the agreed upon performance in an apparently minor way, but the costs of remedying that defect would be much higher than the reduction in property value that the deviation produces. Alternatively, in cases such as *Peevyhouse v. Garland Coal & Mining Co.,*[15] a lessee has agreed to restore the lessor's property after the lessee has used it, but the costs of restoration turn out to be much higher than the increase in property value that restoration would have created. Courts commonly reject market damages in these cases in favor of awarding the buyer the "market delta"—the difference between the market value of the buyer's property had the seller performed and the property's actual market value.[16]

The economic waste rationale for awarding market delta damages is unsatisfactory, however, because a rational buyer will not use the cost-of-completion damage award to purchase a performance that is worth less to him than its price. The buyer will spend the legal award, but he will not waste it.[17] Modern courts realize that buyers will not use the money to

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at 1198–1201 (observing that U.C.C. grants buyers option of recovering contract-market differential by establishing market price or covering contract with another seller).

14. 129 N.E. 889 (N.Y. 1921). In *Jacob & Youngs*, the owners discovered that the pipe installed in their summer home was of a different brand than that specified in the contract, though apparently the installed brand would have performed as well as the contract brand. Id. at 890. The cost of replacing the installed pipe would have been large because substantial portions of the completed home would have had to be torn down. Id. In finding for the contractor, Justice Cardozo observed that the market value of the home was trivially lower than the value it would have had if the contract pipe were installed. Id. He then invoked the economic waste doctrine as the rationale for limiting the owners to the diminution in market value caused by the breach. Id. at 891. Many commentators believe the case can be justified on the ground that the requirement of Reading pipe in the contract was a generic standard and not a specification that only pipe manufactured by that firm would conform to the contract. Thus, the contractor's performance fully conformed to the contract specifications. For discussion, see Richard Danzig & Geoffrey R. Watson, The Capability Problem in Contract Law: Further Readings on Well-Known Cases 111–12 (2d ed. 2004) (observing that it "was the normal trade practice to assure wrought iron pipe quality by naming a manufacturer"); Carol Chomsky, Of Spoil Pits and Swimming Pools: Reconsidering the Measure of Damages for Construction Contracts, 75 Minn. L. Rev. 1445, 1447 (1991) ("The contract apparently specified Reading pipe only to provide a standard to ensure that Jacob & Youngs used pipe of the proper quality."). Nevertheless, Cardozo did not rest his opinion on the assumption that the contractor had fully performed but rather accepted the trial court's conclusion that the contractor was in breach. *Jacob & Youngs*, 129 N.E. at 890. Thus, the rule in the case has survived and is commonly applied in cases where the performance was clearly deficient. See infra note 45 for cases following the *Jacob & Youngs* rule.

15. 382 P.2d 109 (Okla. 1962); see infra note 47 for cases following the *Peevyhouse* rule.

16. Courts commonly refer to this remedy as the "diminution in market value" attributable to the breach. For convenience, we use the designation "market delta" for this remedy throughout this Article.

17. There is no requirement that the buyer use a damage award to demolish existing structures in order to rebuild or complete construction. See, e.g., Green v. Bearden Enters., Inc., 598 S.W.2d 649, 653 (Tex. Civ. App. 1980) (rejecting builder's contention that building owners could not recover cost of repair because they had sold triplex before

undertake repairs that require substantial and inefficient demolition or that have little economic benefit, but they continue to reject damages measured by the ex post market price of the contract performance.[18] Since the cost-of-completion award is meant to enable the buyer to purchase a substitute, and since the buyer will purchase something else, the contemporary rationale holds that cost-of-completion damages would only redistribute wealth from sellers to buyers.[19] Thus, modern courts restrict buyers to the market delta in order to avoid a "windfall."

The consequences of denying market damages in these contexts have been poorly understood, however. The desirability of awarding these damages *whenever* the buyer can purchase a substitute performance on the market becomes clear only when those consequences are exposed. Our analysis of the choice between a market delta award and full market damages supports the following claims. First, restricting buyers to the market delta misallocates resources. When a party contracts, she can sue her partner if he breaches but is similarly exposed to liability if she breaches. Under market damages, these effects exactly offset, so that parties make contracts when their expected gain exceeds contracting costs. The market delta measure, however, distorts the parties' incentives to contract. The measure functions as a subsidy to sellers by reducing the damages for which a breaching seller would otherwise be liable. Sellers pay less than full market damages when they breach but recover full market damages when buyers breach. As a consequence, sellers realize positive expected profits: They expect to gain more when they perform than they expect to lose when they fail to perform. The market delta measure also functions as a tax on buyers, who are liable for full damages when they breach but cannot collect full damages when the seller breaches.[20]

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trial). Buyers may use a monetary award to complete the contract if they attach substantial subjective value to performance, but this would be because they value the aesthetic increase more than the money. If their utility calculus runs the other way, they will spend the money elsewhere.

18. See, e.g., Vezina v. Nautilus Pools, Inc., 610 A.2d 1312, 1319 (Conn. App. Ct. 1992) (remanding to trial court to determine market delta damages where cost of correcting builder's failure to install pool with bowled center would equal cost of building entirely new pool); Wells v. Minor, 578 N.E.2d 1337, 1343 (Ill. App. Ct. 1991) (holding that market delta damages are appropriate where market value of repairs is exceeded by cost of making repairs); Mort Wallin of Lake Tahoe, Inc. v. Commercial Cabinet Co., 784 P.2d 954, 955 (Nev. 1989) (upholding market delta as proper basis for award when cost of repairing work to plaintiff's store far exceeded loss in market value caused by breach); Eastlake Constr. Co. v. Hess, 686 P.2d 465, 475 (Wash. 1984) (holding that market delta damages are proper award when cost of replacing defectively constructed items would be " 'clearly disproportionate'" to value conferred by such replacement (citation omitted)).

19. A key doctrinal prerequisite for many such courts is that the breach was not willful and the seller appears to have substantially performed the contract in good faith. See infra note 56 and accompanying text.

20. Since courts award market damages when cover is likely, the market delta measure does not prevent buyers from covering when they value performance at above its cost. Rather, the measure reduces the damages of buyers who will sue for money damages but not use the damage award to cover.

The subsidy encourages new sellers to enter the market to compete the excess profits away while the tax discourages buyers from entering because they may incur losses in expectation. The tax and subsidy effects do not exactly offset, however. Hence, the market delta rule distorts both seller and buyer decisions to enter the market. We show below that the subsidy effect is more significant than the tax effect, so that the market will have an inefficiently large number of firms in equilibrium.[21]

Although the market delta damage measure misallocates resources, some courts may believe nonetheless that the more important concern is distributional. It appears unjust to impose a large windfall loss on the seller, which is the apparent result of awarding cost-of-completion damages when they greatly exceed the market delta.[22] This concern prompts our second claim: The seller's windfall loss is smaller than is generally realized in the common case where the buyer prepays for the contract service. A buyer who has prepaid is entitled *both* to restitution of the price paid for the service and to damages for the breach of contract.[23] Cost-of-completion damages incorporate this restitutionary component. The cost of completion is the ex post market price for the contract service. This price, in turn, is the sum of (a) the ex ante market price and (b) the difference, if any, between the ex post market price and the ex ante market price.[24] Hence, if the initial contract and the replacement contract were both made at current market prices, awarding the buyer the cost of completion satisfies both his restitutionary claim to recover the price and his expectation interest claim for market damages. Since

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21. Subsidies may be desirable when the state has noneconomic reasons for encouraging participation in particular markets. For example, people defend farm subsidies because family farms are thought to sustain important social values. Contract law, however, applies generally to all markets, so the market delta-induced subsidy benefits sellers generally rather than targeting a specific segment of the population. No apparent nonpecuniary motives outweigh the consequent inefficiency.

22. The concern that market damages may sometimes impose a large windfall loss on the seller must be balanced against the risk that awarding market delta damages will often undercompensate the buyer. The market delta measure is significantly undercompensatory when the ratio of the market value of performance to the true value is small. Courts can observe market values but often cannot observe true values, especially when those values are largely subjective. When a buyer's true loss from breach greatly exceeds his market value loss, awarding the buyer only the market loss may prevent the buyer from purchasing a substitute that he values in excess of its cost.

23. In theory, a restitution claim will lie whenever a seller fails to perform a contract service after accepting all or part of the contract price for that service. See, for example, Chamberlain v. Parker, 45 N.Y. 569, 572 (1871), which stated:

> [I]f [a person] chooses to erect a monument to his caprice or folly on his premises, and employs and pays another to do it, it does not lie with a defendant who has been so employed and paid for building it, to say that his own performance would not be beneficial to the plaintiff.

Id. (emphasis added).

24. For readers who like algebra, denote the ex post market price for the contract service as p_m and the contract price as p_k. A buyer who is awarded restitution of p_k plus market damages of $p_m - p_k$ receives $p_k + (p_m - p_k) = p_m$, which is the cost of completion.

the buyer has an independent right to restitution when the seller takes the money but fails to perform the contract service, courts that wish to avoid windfall losses should compare the market delta *not* to the full cost of completion but *only* to the market damages portion. The difference between market damages and the market delta necessarily is smaller than the difference between full cost-of-completion damages and the market delta. Since prepayment is common, an implication of our second claim is that courts that prefer the market delta measure should still award market damages in more cases than they now do.

Courts and most commentators have overlooked this implication because they have not recognized that buyers prepay for the services that commonly appear in the cases.[25] This omission probably occurs because the services are bundled together and are not separately priced. As an example, the royalty on a mineral lease is smaller if the lessee agrees to restore the land after mining, but there seldom is an explicit "subprice" for restoration.[26] The cost of constructing a building seldom is disaggregated into separate prices for the promise to install the plumbing and the promise to correct defective work. But to deny that the buyer in such cases has prepaid is to assert, implausibly, that the mining lessee had agreed to restore for nothing or that the contractor did not charge for the service of correcting nonconforming plumbing.[27]

The bundling problem would sometimes make it infeasible for a court to retain the economic waste rule but apply it only when the market delta is well below the market damages component. This version of the economic waste rule is hard to implement in the prepayment case be-

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25. A few scholars have noted the restitutionary element of the buyer's claim. See, e.g., Marvin A. Chirelstein, Concepts and Case Analysis in the Law of Contracts 190 (5th ed. 2006) (observing that "although [*Groves* is] presented as a case involving 'contract damages,' it may be more accurate to regard [the case] as a problem in restitution"); Melvin A. Eisenberg, The Disgorgement Interest in Contract Law, 105 Mich. L. Rev. 559, 592–99 (2006) (arguing that "in the absence of disgorgement the promisor will be unjustly enriched because she will have been paid for a performance she did not render"); E. Allan Farnsworth, Your Loss or My Gain? The Dilemma of the Disgorgement Principle in Breach of Contract, 94 Yale L.J. 1339, 1384–85 (1985) (stating that if promisor realizes gain because of breach, there has been "abuse of contract").

26. In none of the celebrated restoration cases involving mining leases did the contract contain an explicit subprice for the restoration service. See, e.g., Peevyhouse v. Garland Coal & Mining Co., 382 P.2d 109, 114 (Okla. 1962) (holding that damages recoverable were limited to diminution in value of premises rather than cost of performance); infra notes 46–47.

27. The standard construction contract contains an independent promise by the contractor to correct any defective construction. This promise binds even after substantial performance of the contract. See, e.g., Am. Inst. of Architects, AIA Document A-201-1997, General Conditions of the Contract for Construction art. 12.2.2.1 (1997), available at http://www.umich.edu/~cee431/AIA/05.04.05_A201_SAMPLE_encrypted.pdf (on file with the *Columbia Law Review*) [hereinafter AIA Doc. A201] ("[I]f, within one year after the date of Substantial Completion of the Work . . . any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner . . . .").

cause the court must disaggregate a cost-of-completion award into its constituent elements of restitution (i.e., the ex ante contract price of the service) and market damages.[28] If the contract has one price for a bundled set of tasks (i.e., mining plus restoration), identifying which portion of the price is for the service at issue can be difficult. A court's realistic choices will often reduce either to continuing the current practice of comparing the full cost of completion to the market delta or to awarding cost-of-completion damages in all cases.

Despite the fact that current practice vitiates the buyer's right to restitution, a court concerned with avoiding large windfall losses may still be more willing to apply the market delta rule in the prepayment case. This is because windfall losses are larger when the buyer prepays. Parties bundle services such as construction or restoration because the original seller is the lowest-cost provider (e.g., a mining lessee may more cheaply restore than a stranger to the already-mined property). Because bundling is efficient, the contract price for a bundled service is less than the price for that service if it were purchased separately: The lower the contract price, the larger are market damages and the larger is the gap between these damages and the market delta.

This analysis leads to our third claim: The market delta rule creates two additional inefficiencies when buyers prepay. First, the tax that the market delta rule imposes on buyers becomes large when sellers can retain prepayments but not perform the contract service satisfactorily. In this circumstance, many buyers would expect to lose money. These buyers will avoid contracting for the service in its efficient bundled form in favor of contracting for the service separately at a higher price. Second, restricting buyers to the market delta in the prepayment case creates a moral hazard. The market delta rule is applied against buyers who sue for money damages but will not cover because the cost of purchasing the service *after* the seller has completed her other tasks exceeds its value. Sellers, however, sometimes can reduce the cost of performing the contract service below the buyer's value by taking precautions *in the interim* between the time of contract and the time when the seller is to complete the entire performance. But a prepaid seller's incentive to invest efficiently in cost reduction is materially reduced if her damage exposure for failing to invest is capped by the market delta. Cost-of-completion damages in these cases thus function as an efficient deterrent against this moral hazard.[29]

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28. As an example, let the cost of completion (the ex post market price) be 15, and suppose that the market delta is 2. If the contract price is 5, market damages are 15 − 5 = 10, which is five times greater than the market delta. If the contract price is 10, then market damages are 5, which is only two and a half times the market delta. A court that prefers to restrict a buyer to the market delta when it is small in relation to market damages thus must know the contract price for the relevant service.

29. A few commentators have recognized the incentive effects of a cost-of-completion rule in motivating the seller to take ex ante precautions. See, e.g., Chomsky, supra note 14, at 1479 (noting that cost-to-complete damages default would motivate contractor to

Finally, parties contract in market contexts when material movements in market prices would otherwise disrupt their plans. Market damages eliminate the disruption risk because they insure parties against price movements. We show that market damages *uniquely* induce parties to contract when contracting costs are less than the disruption that a contract can avoid. Our initial three claims demonstrate the superiority of market damages at protecting the expectation interest of parties who make contracts. Our final claim holds that parties will make ex ante efficient contracts if they expect always to receive market damages when their promisors breach.

The Article proceeds as follows. Part I examines a sample of cases concerning the award of damages for a seller's breach in order to recover the law in action under the economic waste doctrine. When the cost of completion significantly exceeds the market delta, most contemporary courts apply the economic waste rule and limit the buyer to the diminution in market value. This Part also shows that, in effect if not in law, the market delta measure is a mandatory rule. Part II shows that awarding market damages to sellers but selectively denying them to buyers misallocates resources, that market damages cannot adversely affect investment incentives, and that protecting the expectation interest with market damages uniquely maximizes the probability that parties will make efficient contracts. In Part III, we develop the additional inefficiencies that the market delta rule produces when buyers prepay. Part IV applies the prior arguments to show that cost-of-completion damages should be the universal default regardless of the extent to which this award would exceed the market delta. In the conclusion, we generalize the analysis by commenting briefly on the courts' regrettable tendency to enact mandatory rules that displace standard commercial practice.

I. RECOVERING THE LAW ON BUYERS' DAMAGES IN SERVICE CONTRACTS

A. *The Uncertainty Concerning Economic Waste Claims*

Perhaps no problem in contract law has been as vexing for courts as the question of the appropriate measure of damages for breach by a seller of a construction or other service contract. The general rule per-

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"take extra precautions to perform properly"). But absent prepayment, the question of which damages award will generate optimal precautions under conditions of uncertainty is complex and context dependant. See generally Richard Craswell & John E. Calfee, Deterrence and Uncertain Legal Standards, 2 J.L. Econ. & Org. 279, 298–99 (1986) (observing that uncertainty created by enforcement of legal rules "can change the incentives created by the legal rules in unexpected ways"). Thus, prior analyses have also worried that the cost-of-completion award might induce excessive precautions. We show in Part III.B that the fact of prepayment systematically skews the seller's incentives so that the market delta rule is always inefficient. Moreover, as we suggest in Part IV.B, a seller can opt out of a cost-to-complete default in those instances where the risk of excessive, costly precautions justifies a lower damage measure. See infra notes 143–144 and accompanying text (describing circumstances in which parties opt out of cost-to-complete default).

mits the buyer to recover expectation damages as measured by the loss in value to the buyer caused by the seller's breach. Courts recognize that this difference in value is best shown by evidence of the cost of completion or of correcting the defect.[30] The cost of completion measures the buyer's true expectancy loss more accurately than does the opinion of an expert as to the diminution in market value resulting from the breach. The cost-of-completion or repair measure is circumscribed, however, by the fair market value of the property.[31] If this measure appears grossly disproportionate to the benefit obtained or if the repair involves the substantial destruction of the seller's work, then the buyer is limited to the diminished market value on the ground that the standard remedy would produce "economic waste."[32]

Despite the clear statement of the general rule, the application of the "economic waste doctrine"[33] remains unclear. For example, courts have declined to apply the economic waste rule when the buyer appears to attach aesthetic value to the promised performance.[34] The evidence of possible subjective value seems to ease the fear that cost-of-completion damages will be overcompensatory. Even more uncertainty exists when

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30. See, e.g., St. Louis, L.L.C. v. Final Touch Glass & Mirror, Inc., 899 A.2d 1018, 1028 (N.J. Super. Ct. App. Div. 2006) (finding that awarding cost of completion damages "gives plaintiff what it bargained for, and does not reward defendant for its faulty construction").

31. See, e.g., Magnus Homes, LLC v. DeRosa, 545 S.E.2d 166, 167 (Ga. Ct. App. 2001) ("The amount of reasonable costs to repair is circumscribed by the fair market value of the property and the contract price, because the owner cannot be placed in a better position than if the contract had not been breached.").

32. Kurt v. Reams, 683 N.W.2d 127, 2004 WL 893967, at *3 (Iowa Ct. App. 2004) (unpublished table decision); see also Stom v. St. Clair Corp., 153 S.W.3d 360, 364 (Mo. Ct. App. 2005) ("When the homeowner presents evidence of the cost of repair or replacement, the 'contractor has the burden of presenting evidence that the cost of repairing or replacing the property is disproportionate to the diminution in value of the property.'" (quoting Ken Cucchi Constr., Inc. v. O'Keefe, 973 S.W.2d 520, 527 (Mo. Ct. App. 1998))).

33. For convenience, in this Article we refer to both the traditional "economic waste" and the more contemporary "no economic benefit" formulations collectively as the "economic waste doctrine." We show below that the rhetorical difference has no effect on case outcomes.

34. See, e.g., Carter v. Quick, 563 S.W.2d 461, 465 (Ark. 1978) (noting the "interest of the owner . . . in having defective construction corrected" and awarding damages equal to cost of completion); Gory Associated Indus., Inc. v. Jupiter Roofing & Sheet Metal, Inc., 358 So. 2d 93, 95 (Fla. Dist. Ct. App. 1978) (awarding cost of repairs after finding that cost of correction was not "grossly disproportionate" to value of property as a whole (quoting Edgar v. Hosea, 210 So. 2d 233, 234 (Fla. Dist. Ct. App. 1968))); A.B.C. Builders, Inc. v. Am. Mut. Ins. Co., 661 A.2d 1187, 1191 (N.H. 1995) ("The cost of restoration may be a proper measure of damages, even if greater than the diminution of the property's value, where 'there is a reason personal to the owner for restoring the original condition' of the property." (quoting Moulton v. Groveton Papers Co., 323 A.2d 906, 911 (N.H. 1974))); Edenfield v. Woodlawn Manor, Inc., 462 S.W.2d 237, 241–42 (Tenn. Ct. App. 1970) (distinguishing between commercial and residential buildings in awarding cost of repairs for faulty construction of residential dwelling); see also infra notes 50–53 and accompanying text.

the seller has failed to perform a portion of the contract. Many of these cases involve a breach by the seller of her promise to regrade or restore premises at the end of a lease term. Here the cases are divided. Some courts have held that when the seller materially breaches her promise to regrade or restore, the buyer is entitled to cost-of-completion damages even though the expenditure of a large completion cost would produce only a small market-value gain.[35] Many other courts, however, apply the economic waste doctrine to award only the market delta that the promisor's services would have generated.[36] These latter cases follow the holding in *Peevyhouse v. Garland Coal & Mining Co.*[37] Although the Oklahoma court in *Peevyhouse* appeared to limit its holding to cases in which the promise to regrade was an "incidental" purpose of the contract, subsequent case law in Oklahoma rests the diminution measure on the principle that the buyer should recover no more than is allowed by the compensation principle of contract damages.[38]

The uncertainty surrounding the economic waste doctrine reflects the courts' ambivalence about the appropriate choice of damage measure. This ambivalence follows from the courts' failure to isolate the factors that should influence their choice of the appropriate remedy. For example, ex post completion costs may significantly exceed their contribution to market value when these costs partly reflect the buyer's prepayment of the contract price. Moreover, the market delta measure may be an inaccurate proxy for the buyer's valuation, especially when the buyer does not otherwise receive restitution of his prepayment. Finally, the

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35. See, e.g., Rock Island Improvement Co. v. Helmerich & Payne, Inc., 698 F.2d 1075, 1078 (10th Cir. 1983) (refusing to adhere to rule in *Peevyhouse*); Groves v. John Wunder Co., 286 N.W. 235, 237 (Minn. 1939) (finding willful breach of contract and awarding cost of repair); Emery v. Caledonia Sand & Gravel Co., 374 A.2d 929, 933 (N.H. 1977) (finding that awarding cost of repair would not be wasteful); Am. Standard, Inc. v. Schectman, 439 N.Y.S.2d 529, 533 (App. Div. 1981) ("That the burdens of performance were heavier than anticipated and the cost of completion disproportionate to the end to be obtained does not, without more, alter the rule that the measure of plaintiffs' damage is the cost of completion.").

36. See infra notes 45, 47 and accompanying text.

37. 382 P.2d 109 (Okla. 1962). In *Peevyhouse*, the lessee breached its contract to regrade a family farm at the conclusion of a mining lease term. The cost of completion was estimated to be $29,000, while the failure to regrade diminished the market value of the property by only $300. Id. at 112. Since it appeared to the court that the cost of regrading so greatly exceeded its economic benefit, the court measured the property owners' lost expectancy by the lesser amount. Id. at 114.

38. See, e.g., Schneberger v. Apache Corp., 890 P.2d 847, 852 (Okla. 1994) ("Oklahoma case law . . . ha[s] interpreted the proper measure of damages to be diminution in value.").

seller may have failed to take efficient ex ante precautions to prevent extraordinary repair[39] or completion costs.[40]

In short, the proper damage remedy could conceivably depend on the causes of the divergence between cost of completion and market value. If the divergence reflects, in part, the buyer's prepayment of the price for the contract service, then the question is which damage measure discourages excessive breach by sellers or better approximates the compensation goal of contract damages. In cases where the ex post restoration or repair costs are endogenous, it may be appropriate to ask which measure motivates efficient precautions by the seller. Finally, one might properly conclude that neither damage measure will support the compensation goal or improve contractual incentives in all cases. According to this view, the optimal damage rule should be a default. But assume a buyer attempts to opt out of the market delta rule. Would a court enforce a liquidated damages clause that protected the buyer's subjective valuation where it greatly exceeded the market delta? Are there other contractual mechanisms parties could select that would ensure that the buyer's valuation of the contract services was protected?

There is continuing doctrinal uncertainty about the answers to these questions. The normative question of which damage measure is best cannot be resolved until the relevant positive questions are answered. Given the range of factual conditions in economic waste cases, it is unsurprising that there remains substantial confusion about what damages a court will award and whether parties are free to contract away from a given damage measure. In the following section, therefore, we recover the law in action to determine more precisely the scope and rationale of the economic waste doctrine.

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39. See, e.g., Jacob & Youngs, Inc. v. Kent, 129 N.E. 889, 890 (N.Y. 1921) (explaining that extraordinary costs of completion resulted from contractor's failure to inspect pipe to be installed throughout owner's residence on site to ensure it complied with contract specifications). As an aside, it seems quite clear that Justice Cardozo interpreted the contract specification that "[a]ll wrought-iron pipe must be well galvanized, lap welded pipe of the grade known as 'standard pipe' of Reading manufacture," as a generic quality standard rather than a requirement that only Reading pipe would satisfy the contract specifications. Id. at 890. Notwithstanding this plausible justification for the result of the case, the holding was explicitly based on the economic waste doctrine, which appears to presuppose a breach by the seller, and the holding has significantly influenced subsequent case law. Id. at 891–92.

40. The facts of *Peevyhouse* provide a useful example. The defendant, Garland, admitted at trial that the owners had insisted that the regrading provisions be included in the contract and that they would not agree to the coal mining lease unless the promise to regrade was included. Heavy rains caused Garland to postpone the promised remedial work. In the interim, Garland relocated the grading equipment to another profitable site and subsequently decided not to return to complete the remedial work. Judith L. Maute, *Peevyhouse v. Garland Coal & Mining Co.* Revisited: The Ballad of Willie and Lucille, 89 Nw. U. L. Rev. 1341, 1368–69, 1381 (1995).

B. *What Courts Actually Do*

In order to evaluate systematically how contemporary American
courts treat economic waste claims across a range of factual situations, we
analyzed a sample of 110 cases, most of which were litigated over the past
two decades.[41] Our goal was to disaggregate the cases by uncovering the
factual patterns that generated litigation and identifying the legal conse-
quences that courts attached to those patterns.

The cases in our sample fell into four patterns, the first two of which
comprise cases where the court awarded cost-of-completion damages but
based on quite different facts. Sixty-two cases involved breach by the con-
tractor where there was insufficient evidence of disproportion between
completion cost and market value. In each of these cases, the courts fol-
lowed the standard rule that cost of completion was the preferred dam-
age measure. These courts emphasized the historic preference of the
common law for market damages as the best way to measure the buyer's
lost value whenever there was a good market for the contract services.[42]
This preference for market damages dominated because the seller was
unable to carry the burden of proving that completion cost damages
greatly exceeded the market delta.[43] On the other hand, in nine cases

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41. We gathered our sample in two stages. In stage one we produced a sample of fifty-
six cases. Our research strategy involved the following steps: (1) Compiling a list of cases
dealing with the choice between "cost of completion" and "diminution in value," via a
search on Westlaw; (2) Selecting a random sample of fifty of these cases, with a
disproportionate number taken from the last decade; (3) Supplementing this random
sample with a targeted sample of cases specifically addressing the situation where the issue
of disproportion arose either by a reduction in land or market values ex post or where the
owner attached an idiosyncratic value to the construction/restoration. This last step added
an extra six cases.

Subsequently, we augmented this initial sample with a further sample of fifty-four
cases. Here our research strategy involved the following steps: (1) Searching Westlaw for
cases dealing with "cost of completion" or "diminution in value" under Key Numbers
discussing damages: 115k103–16 (Measure of Damages, Injuries to Property); 115k117–26
(Measure of Damages, Breach of Contract); 115k139.5–40 (Amount Awarded, Breach of
Contract); (2) Performing another targeted search for cases dealing with "difference in
market value" using the same Key Numbers, because of the limited number of cases
dealing with diminution in value. This step added four additional cases.

42. See, e.g., Magnus Homes, LLC v. DeRosa, 545 S.E.2d 166, 167 (Ga. Ct. App. 2001)
(explaining that "proof of the cost of repair . . . is more likely to represent the true damage
suffered from the failure of a contractor to complete his contract than would the opinion
of an expert as to the difference in values . . . ."(citation omitted)); St. Louis, L.L.C. v. Final
Touch Glass & Mirror, Inc., 899 A.2d 1018, 1025 (N.J. Super. Ct. App. Div. 2006)
(explaining that damages "[u]sually . . . will be based on the cost to remedy any defect,
rather than the diminution in value" (citation omitted)).

43. See, e.g., Info. Sys. & Networks Corp. v. City of Kansas City, 147 F.3d 711, 713 (8th
Cir. 1998); Rafferzeder v. Zellner, 613 S.E.2d 229, 231 (Ga. Ct. App. 2005); Martin v.
McKenney, 429 S.E.2d 270, 272 (Ga. Ct. App. 1993); Kurt v. Reams, 683 N.W.2d 127, 2004
WL 893967, at *7 (Iowa Ct. App. 2004) (unpublished table decision); Serv. Unlimited, Inc.
v. Elder, 542 N.W.2d 855, 858 (Iowa Ct. App. 1995); Mount Mariah Baptist Church, Inc. v.
Pannell's Associated Elec., Inc., 835 So. 2d 880, 888 (La. Ct. App. 2002); Stom v. St. Clair
Corp., 153 S.W.3d 360, 364 (Mo. Ct. App. 2005); Erney v. Freeman, 84 S.W.3d 529, 536

the court followed the standard rule and awarded completion cost damages even though the seller had established that completion costs would substantially exceed the market delta. Each of these cases raised the issue of subjective value. When there was credible evidence of aesthetic value, the court followed the standard rule notwithstanding the evidence of disproportion.[44]

Conversely, the last two patterns represent cases where courts overwhelmingly rejected the buyer's claim for the cost of completion and instead awarded market delta damages. In thirteen of those cases, the seller had substantially completed a construction project but had breached its obligation to repair a defective performance ex post. In each instance, the seller proved that a substantial demolition or destruction of existing work was required to meet the contract specifications. These courts uniformly followed *Jacob & Youngs, Inc. v. Kent*, limiting the plaintiff to market delta damages where completion costs were disproportionately greater.[45] A similar result was reached in the final pattern of sixteen cases involving unfinished work or incomplete performance. Most of these cases involved commercial tenants—including lessees holding mining or mineral rights—who failed to return or restore property as required at the end of a lease term.[46] The buyer in each case requested

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(Mo. Ct. App. 2002); McLane v. Wal-Mart Stores, Inc., 10 S.W.3d 602, 607 (Mo. Ct. App. 2000); Carriger v. Ballenger, 628 P.2d 1106, 1109 (Mont. 1981); *St. Louis*, 899 A.2d at 1025; Marino v. Lewis, 792 N.Y.S.2d 572, 572 (App. Div. 2005); Kaufman v. Le Curt Constr. Corp., 601 N.Y.S.2d 186, 188 (App. Div. 1993); City of Charlotte v. Skidmore, Owings & Merrill, 407 S.E.2d 571, 581 (N.C. Ct. App. 1991); Lapierre v. Samco Dev. Corp., 406 S.E.2d 646, 650–51 (N.C. Ct. App. 1991); Swain v. Harvest States Coops., 469 N.W.2d 571, 574 (N.D. 1991); All Seasons Water Users Ass'n, Inc. v. N. Improvement Co., 399 N.W.2d 278, 281 (N.D. 1987); GSB Contractors, Inc. v. Hess, 179 S.W.3d 535, 543 (Tenn. Ct. App. 2005); Panorama Vill. Homeowners Ass'n v. Golden Rule Roofing, Inc., 10 P.3d 417, 427–28 (Wash. Ct. App. 2000).

44. See, e.g., Carter v. Quick, 563 S.W.2d 461, 463–66 (Ark. 1978); Am. Constr. & Envtl. Servs., Inc. v. Mosleh, No. A093541, 2002 WL 31480282, at *5–*6 (Cal. Ct. App. Nov. 7, 2002); Orndorff v. Christiana Cmty. Builders, 266 Cal. Rptr. 193, 197 (Ct. App. 1990); Gory Associated Indus., Inc. v. Jupiter Roofing & Sheet Metal, Inc., 358 So. 2d 93, 94–95 (Fla. Dist. Ct. App. 1978); Kangas v. Trust, 441 N.E.2d 1271, 1275–77 (Ill. App. Ct. 1982); A.B.C. Builders, Inc. v. Am. Mut. Ins. Co., 661 A.2d 1187, 1191 (N.H. 1995); Lyon v. Belosky Constr. Inc., 669 N.Y.S.2d 400, 402 (App. Div. 1998); City Sch. Dist. of Elmira v. McLane Constr. Co., 445 N.Y.S.2d 258, 260–61 (App. Div. 1981); Edenfield v. Woodlawn Manor, Inc., 462 S.W.2d 237, 241–42 (Tenn. Ct. App. 1970).

45. See, e.g., Lowe v. Morrison, 412 So. 2d 1212, 1213 (Ala. 1982); Maricopa County v. Walsh & Oberg Architects, Inc., 494 P.2d 44, 46–47 (Ariz. Ct. App. 1972); Williams v. Charles Sloan, Inc., 706 S.W.2d 405, 406–07 (Ark. Ct. App. 1986); Vezina v. Nautilus Pools, Inc., 610 A.2d 1312, 1318–19 (Conn. App. Ct. 1992); Grossman Holdings Ltd. v. Hourihan, 414 So. 2d 1037, 1039 (Fla. 1982); Wells v. Minor, 578 N.E.2d 1337, 1343–44 (Ill. App. Ct. 1991); Mort Wallin of Lake Tahoe, Inc. v. Commercial Cabinet Co., 784 P.2d 954, 955 (Nev. 1989); Gadbois v. Leb-Co Builders, Inc., 458 A.2d 555, 558–60 (Pa. Super. Ct. 1983); Precision Homes, Inc. v. Cooper, 671 S.W.2d 924, 927 (Tex. App. 1984).

46. See, e.g., Am. Standard, Inc. v. Schectman, 439 N.Y.S.2d 529, 530–31 (App. Div. 1981) (awarding damages for cost of repair rather than diminution in market value). American Standard contracted with Schectman to sell all of the fixtures and improvements

cost-of-completion damages based on the ex post market price for the restoration services. The seller, in turn, was again able to show that completion costs would greatly exceed the market delta. In fourteen of the sample cases (or 87.5% of the cases of this pattern), the court followed the *Peevyhouse* rule and limited the plaintiff to market delta damages.[47] This result is contrary to the conventional wisdom that in this last class of cases the courts frequently award cost-of-completion damages because there was a material failure of performance by the seller.[48]

The award of cost-of-completion damages in the first category of cases is unremarkable. When "economic waste" evidence is absent and there is a market for the contract goods or services, cost-of-completion damages accurately measure the buyer's true expectation loss. As discussed above, a court can apply this measure if it knows only the contract price and the ex post market price, both of which commonly are recover-

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on its property so that the land could be graded and offered for sale. Id. For $275,000, Schectman agreed to remove the improvements and fixtures from the land and grade the property. Id. The intent of the demolition and grading was "to provide a reasonably attractive vacant plot for resale." Id. at 531 n.2. Schectman subsequently discovered that some improvements were well below ground level and would cost substantially more to remove than anticipated. Id. at 531. Schectman was paid the $275,000, removed the improvements above the ground, and graded the land without removing the below ground improvements. Id. Schectman's failure to grade the land as specified reduced the market value of the land by less than $3,000. Id. American claimed cost-of-completion damages estimated at $110,500 and was ultimately awarded $90,000 in damages (plus interest and costs). Id. at 530.

47. See, e.g., Youngs v. Old Ben Coal Co., 243 F.3d 387, 392–93 (7th Cir. 2001); Bowes v. Saks & Co., 397 F.2d 113, 116–17 (7th Cir. 1968); Mo. Baptist Hosp. v. United States, 555 F.2d 290, 296 (Ct. Cl. 1977); Avery v. Fredericksen & Westbrook, 154 P.2d 41, 42–45 (Cal. Dist. Ct. App. 1944); Seago v. Fellet, 676 P.2d 1224, 1226 (Colo. Ct. App. 1983); Muroff v. Dill, 386 So. 2d 1281, 1284 (Fla. Dist. Ct. App. 1980); Ideal Pool Corp. v. Hipp, 370 S.E.2d 32, 33–34 (Ga. Ct. App. 1988); Ceres Terminals, Inc. v. Chi. City Bank & Trust Co., 635 N.E.2d 485, 503 (Ill. App. Ct. 1994); Asp v. O'Brien, 277 N.W.2d 382, 384–85 (Minn. 1979); Dimick v. J.K. Noonan, 242 S.W.2d 599, 602–03 (Mo. Ct. App. 1951); Schneberger v. Apache Corp., 890 P.2d 847, 852 (Okla. 1994); Freeman v. Maple Point, Inc., 574 A.2d 684, 686–88 (Pa. Super. Ct. 1990); P.G. Lake, Inc. v. Sheffield, 438 S.W.2d 952, 955–56 (Tex. Civ. App. 1969); Ruddach v. Don Johnston Ford, Inc., 621 P.2d 742, 744–45 (Wash. Ct. App. 1980).

48. Most texts characterize the case authorities as divided, implying that cases such as *American Standard* and Groves v. John Wunder Co., 286 N.W. 235 (Minn. 1939), are equally numerous as cases such as Peevyhouse v. Garland Coal & Mining Co., 382 P.2d 109 (Okla. 1963). See E. Allen Farnsworth, Contracts § 12.10 (4th ed. 2004); John E. Murray, Jr., Murray on Contracts § 118 (4th ed. 2001). Modern Contracts casebooks are to the same effect. See, e.g., Scott & Kraus, Contract Law, supra note 3, at 878–80. Indeed, the Tenth Circuit awarded cost-of-completion damages to an Oklahoma lessor suing the lessee for breach of a reclamation clause on the grounds that they could not believe the Oklahoma courts would continue to adhere to *Peevyhouse*. Rock Island Improvement Co. v. Helmerich & Payne, Inc., 698 F.2d 1075, 1078 (10th Cir. 1983). Thereafter, the Oklahoma Supreme Court affirmed and extended the *Peevyhouse* decision in *Schneberger*, 890 P.2d at 852.

able.[49] Moreover, assuming that expectation damages are the theoretical baseline, principles of mitigation also support cost-of-completion recoveries in the mine run of cases, since ordinarily the cost to complete will be less than its value to the owner.

The other three patterns have more interesting implications. First, the willingness of courts to adopt a cost-of-completion rule when the breach involves work that demonstrably has aesthetic value tends to undercut the implicit assumption that the market delta measure better approximates true losses in economic waste cases. Disagreements over defective brick veneer,[50] or a new roof of red-barrel tile,[51] or air conditioning in southern climates[52] support inferences that the buyer's valuation exceeds the ex post market value and thus rebut any assumption that valuation is accurately measured by the market delta.[53] But as we show below, the inference that the buyer's valuation exceeds the market's valuation is not limited to cases where aesthetic considerations are obvious. Rather, it is implied from the buyer's decision to contract for repair or restoration services ex ante rather than purchasing those services on the spot market ex post.

The results of the sample are also significant in confirming that the rule of *Jacob & Youngs, Inc. v. Kent* is widely adopted: When the seller has tendered a substantially completed but defective performance, courts reject market damages in favor of the market delta measure *even where there is a good market for substitutes ex post.* As noted above, in the "substantial performance" context the judicial intuition is that a cost-of-completion award would overcompensate buyers. Consequently, the legal right to these damages might invite buyers to demand costly demolition to rectify errors that only minimally affect value as a prelude to bargaining for a side payment from the seller.[54] The courts fail to remark, however, that

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49. See, e.g., Magnus Homes, LLC v. DeRosa, 545 S.E.2d 166, 167 (Ga. Ct. App. 2001) (noting that market damages measure rests on more readily verifiable evidence than opinion of experts regarding hypothetical changes in market value).

50. Carter v. Quick, 563 S.W.2d 461, 463–66 (Ark. 1978).

51. Gory Associated Indus., Inc. v. Jupiter Roofing & Sheet Metal, Inc., 358 So. 2d 93, 94–95 (Fla. Dist. Ct. App. 1978).

52. Edenfield v. Woodlawn Manor, Inc., 462 S.W.2d 237, 240–42 (Tenn. Ct. App. 1970).

53. For discussion of the undercompensation of buyers with subjective value under the market delta rule, see Peter Linzer, On the Amorality of Contract Remedies— Efficiency, Equity, and the Second Restatement, 81 Colum. L. Rev. 111, 116–18 (1981) (discussing difficulties of valuation in noncommercial contexts); Timothy J. Muris, Cost of Completion or Diminution in Market Value: The Relevance of Subjective Value, 12 J. Legal Stud. 379, 382–84 (1983) (arguing for recognition of buyer's subjective values in awarding damages).

54. A recent objection to awarding cost-of-completion damages in economic waste cases is that the remedy generates unnecessary transaction costs. See, for example, the analysis of Judge Posner in Youngs v. Old Ben Coal Co., 243 F.3d 387, 393 (7th Cir. 2001):

> [The buyer] is seeking, but not wanting, specific performance. If he obtained the relief he is seeking, that would just be a prelude to a further negotiation with [the seller]. [The buyer] does not want nonproducing wells; he wants money to

the buyer had paid for a performance that was not provided. In none of the sample cases did the court order a restitution of the buyer's prepayment in addition to the award of market delta damages.[55] Similarly neglected was the issue of whether cost-effective precautions could have reduced the risk of excessive ex post repair costs. Rather, the courts adhered to the common rule that the ex ante actions of the seller were not relevant in determining the damage award unless the evidence otherwise persuaded the court that the seller's breach was "willful" or in "bad faith."[56]

Cases that award market delta damages in the final category are even more difficult to reconcile. Most courts limit plaintiffs to market delta damages when a promisor fails to perform a contractual obligation to restore property at the termination of a lease. Why do courts overwhelmingly deny the claim for cost-of-completion damages even where there was an available market ex post for purchasing the restoration or other contract services? Part of the explanation is doctrinal. Most courts in reclamation and restoration cases cite with approval the "economic waste" rationale that *Jacob & Youngs, Inc.* and its progeny have promul-

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compensate him for a loss that he has not sustained, since the restoration of the wells would have value for him only if there were oil left in the ground. The essentially extortionate transaction, a source of transaction costs not offset by any social benefit, for which an order of specific performance would have set the stage is another compelling objection, though less to the claim underlying the suit than to the relief sought, the grant of which would be inequitable.

The model infra Part II excludes renegotiation because the value the buyer places on performance may be unobservable by the seller. In these cases, bargaining is costly and may never yield a mutually acceptable result. Parties in this circumstance commonly are assumed to go directly to their disagreement option, which here would be to have a court apply the legal remedy. Our concern is with what that remedy should be. Further, an implicit premise of Judge Posner's position is that cost-of-completion damages serve no useful function when they greatly exceed the market delta. Part III.B, infra, shows, to the contrary, that those damages deter inefficient seller failures to perform parts of the deal, and that any ability of the parties to renegotiate will not vitiate this deterrent effect. These results imply that renegotiation costs should not count against an award of cost-of-completion damages.

55. See cases cited supra note 45.

56. See, e.g., Shell v. Schmidt, 330 P.2d 817, 823 (Cal. Dist. Ct. App. 1958) (noting that "good faith" or "lack of willfulness" must be proven in order to utilize the substantial performance rule and the "value" measure of damages); Groves v. John Wunder, 286 N.W. 235, 236–39 (Minn. 1939) (reversing trial court's judgment for $12,160 and holding that, owing to willful character of lessee's failure to level property as promised in lease, owner was entitled to recover ex post restoration cost of $60,000); Roudis v. Hubbard, 574 N.Y.S.2d 95, 96 (App. Div. 1991) (applying cost-of-completion measure where contractor had intentionally omitted certain construction elements—styrofoam insulation and footing drains—that were required by plans). Despite the fact that the willful breach doctrine invites courts to consider the ex ante actions of the seller, only in the single case of *Roudis v. Hubbard* did a court in our case sample find the seller's breach willful and in bad faith. We argue in Part III.B that the market delta rule, together with a reluctance to apply the willful breach doctrine, creates a moral hazard in which sellers will have a perverse incentive not to take efficient ex ante precautions against breach.

gated.[57] In the case of nonperformance, where no existing work must be demolished, the doctrinal formulation is modified. Courts hold that the market delta measure governs where the award of cost-of-completion damages would provide "no economic benefit" to the plaintiff or would be "unreasonably disproportionate" to the loss that was occasioned by the breach.[58]

Underlying both the substantial performance and the nonrestoration cases, therefore, is the assumption that cost-of-completion damages will unjustly enrich a buyer whose true loss is better measured by the reduction in the market value of the property. In short, the courts assume that awarding market delta damages rather than the cost of completion would better vindicate the rationales supporting the compensation principle of contract damages. We show below that this assumption is incorrect. Moreover, the concern to avoid a windfall may cause courts to slight other issues embedded in the cases. The point to be made next, however, is that the market delta rule is mandatory. Parties cannot agree to stipulated damages in the ex ante contract when the buyer's valuation for performance is expected to be high.

C. *The Inability to Opt Out of the Market Delta Rule*

No damage measure is optimal for all parties. This implies that the damage rule (whether cost of completion or diminished market value) should be a default. To argue for a default, however, is to raise the concern that courts tend to regard state-created defaults as presumptively fair or efficient; this institutional bias raises the cost of contracting out.[59] But

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57. See, e.g., Tru-Built Garage & Lumber Co., Inc. v. Mays, No. 13432, 1993 WL 15664, at *4 (Ohio Ct. App. Jan. 27, 1993) ("[W]hen the total cost to remedy a defect is grossly disproportionate to the good to be attained, a different measure of damages must be applied to avoid . . . economic waste as well as a windfall to the plaintiff."); see also supra note 47 (citing cases limiting plaintiffs to market delta damages).

58. See, e.g., Hansen v. Andersen, 71 N.W.2d 921, 924 (Iowa 1955) (awarding market delta damages where cost of completion greatly exceeded increase in market value); Asp v. O'Brien, 277 N.W.2d 382, 384 (Minn. 1979) (affirming trial court's use of diminution in value measure because of high cost of repair); *Tru-Built Garage*, 1993 WL 15664, at *4 (same); Freeman v. Maple Point, Inc., 574 A.2d 684, 687 (Pa. Super. Ct. 1990) (finding market delta damages appropriate "where the cost of completing performance or of remedying the defects is clearly disproportionate to the probable loss in value to the injured party").

59. See, e.g., Hayward v. Postma, 188 N.W.2d 31, 33 (Mich. Ct. App. 1971) (stating that parties must use clear and unequivocal language to shift liability for risk of loss from seller to buyer); Davis v. Small Bus. Inv. Co. of Houston, 535 S.W.2d 740, 744 (Tex. Civ. App. 1976) (holding that contractual provision purporting to allocate burden of "all" expenses incurred in preserving collateral to debtor not sufficient to opt out of U.C.C. § 9.207(b)); Caudle v. Sherrard Motor Co., 525 S.W.2d 238, 240 (Tex. Civ. App. 1975) ("A contract which shifts the risk of loss to the buyer before he receives the merchandise is so unusual that a seller who desires to achieve this result must clearly communicate his intent to the buyer."). Moreover, judicial interpreters may be reluctant to give the express language of the contract a meaning that conflicts with the relevant default. See Nanakuli Paving & Rock Co. v. Shell Oil Co., 664 F.2d 772, 794–805 (9th Cir. 1981) (concluding that

putting aside the question of whether default rules are sticky, there is a more fundamental concern: The market delta measure is effectively a mandatory rule. To see why, note first that the market delta rule applies notwithstanding explicit contractual language that obligates the seller to bear the entire cost of repair or restoration. Indeed, there is substantial evidence that parties prefer cost-of-completion damages, both in the construction cases exemplified by *Jacob & Youngs, Inc. v. Kent*, and in restoration cases of the kind illustrated by *Peevyhouse v. Garland Coal & Mining Co.*[60]

Buyers are effectively precluded from protecting this risk assignment with a liquidated damages clause, however, because these clauses permit parties to specify damages only over a subset of a buyer's possible valuations. To see why, assume that a contract stipulates damages and suppose that the value the buyer would realize from performance is very difficult to verify; that is, damages are "speculative." Then the buyer could not conveniently show that the stipulated sum reflected a reasonable estimate of the loss he would incur from breach. Nor could he conveniently show that his actual loss approximated (rather than was much below) that sum. But contract doctrine in every jurisdiction requires a promisee to show that the stipulated sum was a reasonable ex ante estimate, and in many jurisdictions the promisee must also show that the actual ex post loss was reasonable relative to that sum. As a consequence, a liquidated damages clause of this type would be extremely difficult to enforce. Parties thus can liquidate hard-to-prove damages but not *very* hard-to-prove damages.

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merger clause that excludes evidence of prior dealings does not bar evidence of usage of trade to alter price term in contract). For background discussion, see generally Charles J. Goetz & Robert E. Scott, The Limits of Expanded Choice: An Analysis of the Interactions Between Express and Implied Contract Terms, 73 Cal. L. Rev. 261 (1985) [hereinafter Goetz & Scott, Expanded Choice] (discussing extent to which implied and express terms and standardized and individualized agreements operate in antagonistic ways).

   60. See, for example, AIA Doc. A201, supra note 27, art. 12.2.1.1:

   The Contractor shall promptly correct Work . . . failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections and compensation for the Architect's services . . . shall be at the Contractor's expense. (emphasis added).

Similarly, commercial leases commonly contain restoration clauses that expressly obligate the seller to bear the costs of restoration at the conclusion of the lease. See, for example, the restoration clause in the Founders Tower Office Lease between Hebron Communications Corporation and Amerivision Communications, Inc.:

   10.3 Ownership; Removal; Restoration . . . Tenant shall remove any trade fixtures, furniture, moveable equipment and other personal property upon the expiration or termination of the Term. . . . After removing any property from the Premises which Tenant is permitted to remove, Tenant shall promptly, at its expense, repair or restore any damage to the Premises caused by the removal.

Founders Tower Office Lease Between Hebron Communications Corporation and Ameridivision Communications, Inc. art. 10.3 (July 31, 2003), available at http://secinfo. com/d11MXs.2frf.a.htm#1stPage (on file with the *Columbia Law Review*).

The principal example of very hard-to-prove damages is the individual buyer's subjective value loss from breach.[61] This value seldom is verifiable, and thus is not recognized as a "loss." Hence, courts are likely to strike down stipulated damages that substitute for subjective value and that measurably increase the seller's liability above the market delta measure.[62] The difficulty here is a general one, however. A promisee who attempts to put a shopping center in a new area could not easily enforce a liquidated damage clause that estimated total lost profits at a substantial sum. Because of the difficulty of verifying speculative losses, unless parties can find alternative ways to protect their surplus value or to assign the risk of ex post completion costs to the seller, the market delta default operates effectively as a mandatory rule.[63]

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61. See, e.g., Charles J. Goetz & Robert E. Scott, Liquidated Damages, Penalties and the Just Compensation Principle: Some Notes on an Enforcement Model and a Theory of Efficient Breach, 77 Colum. L. Rev. 554, 556 (1977) [hereinafter Goetz & Scott, Liquidated Damages] (noting that subjective value that departs from market value cannot be protected by legally enforceable liquidated damages clause).

62. Id. at 572–74. In applying the penalty rule, the overwhelming majority of courts have held that value to the buyer does not include any merely sentimental or fanciful value attached to the property by the buyer. See St. Louis-S.F. Ry. Co. v. Kittrell, 253 P.2d 1076, 1078 (Okla. 1953); DeSpirito v. Bristol County Water Co., 227 A.2d 782, 784–85 (R.I. 1967); Mieske v. Bartell Drug Co., 593 P.2d 1308, 1311 (Wash. 1979); see also Nelson v. Leo's Auto Sales, Inc., 185 A.2d 121, 124 (Me. 1962) (finding error to permit plaintiff to testify as to her valuation of car at issue at time of purchase). Thus, courts have consistently struck down liquidated damages clauses in construction contracts where the loss to the buyer is subjective. For example, in Muldoon v. Lynch, 6 P. 417 (Cal. 1885), the plaintiff agreed to erect a marble monument over the grave of the defendant's husband for $18,788; the contract provided for liquidated damages of $10 per day for delay in completion. In declaring the agreement void as a penalty, the court concluded:

> There is nothing in this case to indicate that the defendant has suffered any actual damage which can be measured or compensated by money. . . . [I]t has been generally held that the party in whose favor the penalty or forfeiture exists must prove his damage. In the case before us there is no claim of special damage. It might have been quite difficult for the defendant to show any damage of a pecuniary nature for the non-completion of the monument at the time specified, though its completion might have been of great comfort and consolation to her affectionate remembrance.

Id. at 418–19.

In City of Rye v. Public Service Mutual Insurance Co., 315 N.E.2d 458 (N.Y. 1974), an agreement for $200 per day and $100,000 maximum for delay in completion of a building complex was held void as a penalty. The court found that the harm the city contended it would suffer by delay was speculative, or simply noncognizable: "The most serious disappointments in expectation suffered by the city are not pecuniary in nature and therefore not measurable in monetary damages." Id. at 418–19. For other examples, see Sec. Safety Corp. v. Kuznicki, 213 N.E.2d 866, 867 (Mass. 1966) (refusing to apply liquidated damages provision on grounds it was unreasonable and void as penalty); Gorco Constr. Co. v. Stein, 99 N.W.2d 69, 76 (Minn. 1959) (same); Norman v. Durham, 380 S.W.2d 296, 302 (Mo. 1964) (same).

63. We do not claim that it would be impossible for a creative contract drafter to design a clause that protected a buyer's subjective or idiosyncratic value in the contract performance. We do claim that the penalty doctrine imposes a significant litigation risk on parties who attempt to contract out of the market delta rule, because the doctrine fails to

Some scholars have suggested that a buyer can protect hard-to-prove values by requiring his seller to issue a performance bond.[64] Then, it is claimed, the seller's failure to restore or repair could be addressed by having the surety on the bond either complete performance or pay the monetary sum specified in the bond. Chakravarty and MacLeod thus argue that the construction damages "problem" is efficiently solved by the industry standard: the American Institute of Architects (AIA) form contract between owners and contractors.[65]

This claim is not supported by the standard-form AIA contract terms, however. Article 11.5.1 of the General Conditions for the Contract of Construction provides that the "[o]wner shall have the right to require the Contractor to furnish bonds covering faithful performance of the contract."[66] AIA Document A312 specifies the surety's obligations under the standard performance bond following the contractor's material default: The surety is obligated, up to the limit of the amount of the bond (the "penal sum"), to either (a) arrange for the contractor to complete the work; (b) complete the contract itself by hiring another contractor; or (c) pay the owner the *"amount of damages . . . resulting from the contractor's default."*[67] These contract terms permit the surety to discharge its responsibility by causing the required work to be done or by paying to the promisee either the contractually-specified sum *or* the actual damages that the contractor's breach caused.

The duties of a surety under a performance bond thus are measured by the obligations that the contractor agreed to assume and by the legal

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acknowledge the legitimacy of subjective value as a compensable "loss." This risk is higher than the litigation risk that exists in contexts in which liquidated damages clauses are readily enforced (for example, in the case of delay damages in the normal commercial contract). There the objective loss is hard to determine ex ante, and courts are willing to defer to "reasonable" ex ante forecasts. On the other hand, in the class of cases we consider, the objective value—the benefit of performance in market value terms—is not difficult to establish. The problem is that by not treating subjective value as a legitimate "loss" suffered by the buyer, the penalty rule threatens as unreasonable any ex ante estimate that departs significantly from the market delta, which is the objective measure of the buyer's loss. See supra note 61.

64. See Surajeet Chakavarty & W. Bentley MacLeod, Contracting in the Shadow of the Law 19, 31–32 (Nat'l Bureau of Econ. Research, Working Paper No. 13960, 2008), available at http://www.nber.org/papers/w13960.pdf (on file with the *Columbia Law Review*).

65. Id. at 34–35. See generally Am. Inst. of Architects, AIA Document A-101-1997, Standard Form of Agreement Between Owner and Contractor (1997) (on file with the *Columbia Law Review*) [hereinafter AIA Doc. A101]; AIA Doc. A201, supra note 27.

66. AIA Doc. A201, supra note 27, art. 11.5.1.

67. Am. Inst. of Architects, AIA Document A-312-1984, Payment Bond arts. 4.1–4.2 (1984) (emphasis added). Article 4.3 refers to Article 6 in determining the amount of damages owed. Id. art. 4.3. Article 6.3, in turn, provides for the payment of liquidated damages if specified or, in the absence of liquidated damages, "actual damages caused by delayed performance or non-performance of the Contractor." Id. art. 6.3.

constraints on those obligations.[68] If contract law prohibits the contractor from agreeing to pay a penal sum on breach, the surety is a beneficiary of that constraint. Similarly, if contract law permits the contractor to restrict the damages that a promisee can collect, the surety, stepping into the shoes of the contractor, can enforce the restriction. Thus, if the law restricts the promisee to the market delta, the surety is required to pay only the market delta to the promisee under either the liquidated or actual damage terms of the standard AIA contract. Confirming this analysis, a number of courts have held that the surety's liability under a performance bond is limited by common law contract damages principles, including the doctrine of economic waste.[69]

In sum, given the limitation imposed on contracting parties by the penalty doctrine, the market delta default effectively operates as a mandatory rule limiting the buyer to the reduction in ex post market value caused by the breach. Moreover, the common law penalty rule is asymmetric: The rule only constrains clauses that purport to overcompensate the breached-against party,[70] but it does not similarly constrain attempts to underliquidate damages.[71] Provisions for limiting damages

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68. See U.W. Marx, Inc. v. Mountbatten Sur. Co., 770 N.Y.S.2d 777, 780 (App. Div. 2004) ("[A] surety bond attaches to the principal contract and must be construed in conjunction with it.").

69. See, e.g., Grossman Holdings Ltd. v. Hourihan, 414 So. 2d 1037, 1038–40 (Fla. 1982); Forsythe v. Starnes, 554 S.W.2d 100, 109 (Mo. Ct. App. 1977); Fid. & Deposit Co. of Md. v. Stool, 607 S.W.2d 17, 20–24 (Tex. Civ. App. 1980); Am. Employers' Ins. Co. v. Huddleston, 39 S.W.2d 952, 953–54 (Tex. Civ. App. 1931).

In addition to limiting the surety's liability where the contractor is in material breach of the contract, courts have also held that the surety's liability is discharged once the contractor has substantially performed the contract. See L & A Contracting Co. v. S. Concrete Servs., Inc., 17 F.3d 106, 110 (5th Cir. 1994) (holding that "default" under an AIA Document A311 bond means a substantial default warranting termination of the bonded contract). Thus, the performance bond offers no help to owners in the position of the owners in *Jacob & Youngs, Inc. v. Kent.* Finally, we note that the bonding practice did not arise to escape the strictures of the market delta rule. Rather, many contractors could not make credible commitments to perform without a bond, because a breaching contractor could cause significant harm and contractors seldom hold much cash. Indeed, if the restrictions of the liquidated damage rules could be avoided merely by making a third party liable, then third party contracts would be seen in more contexts than are observed today.

70. See, e.g., U.C.C. § 2-718(1) (2001) ("A term fixing *unreasonably large* liquidated damages is void as a penalty." (emphasis added)). This point was first made in Muris, supra note 53, at 389.

71. See, e.g., Pers. Fin. Co. v. Meredith, 350 N.E.2d 781, 785–91 (Ill. App. Ct. 1976) (enforcing contract term that waived buyer's right to assert defense claim); Shaer Shoe Corp. v. Granite State Alarm, Inc., 262 A.2d 285, 286–87 (N.H. 1970) (upholding contractual limitation of damages). Corbin on Contracts adds:

Public policy may forbid the enforcement of penalties against a defendant; but it does not forbid the enforcement of a limitation in his favor. . . . Where a contract provides that damages for breach shall not be recoverable beyond a specified sum, it is obvious that the risk of loss beyond that sum is being assumed by the promisee. If the law allows him to assume the whole risk, with no remedy whatever, it is obvious that it will allow him to assume a part less than the whole.

thus have traditionally been subject only to the familiar process constraints of fraud, duress, and unconscionability.[72] These constraints would not operate in the great majority of cases represented by our sample: The buyers in our sample are generally unsophisticated, nonprofessional individuals contracting with professional firms that are repeat players in the market.[73] Consequently, the penalty rule would not preclude parties from opting out of a universal cost-of-completion default and negotiating a term in the ex ante contract that limited the seller's damages to the market delta.

The preceding analysis answers the positive questions posed above. It shows that the economic waste doctrine is not limited to a few isolated textbook examples. Rather, contemporary courts commonly award diminished market value damages whenever the ex post market price of the contract service is substantially greater than the market delta.[74] This rule applies both when sellers fail to repair defective work and when sellers fail to restore the buyer's premises as promised. In addition, unlike cost-of-completion damages, the market delta rule is a mandatory rule, in effect if not in law, because of the binding constraints of the penalty doctrine. In the next two parts, we turn to the normative question: Given the realities "on the ground," which measure is superior to the other on both efficiency and fairness grounds?

II. A Market Damages Model

We begin the analysis of the economic waste doctrine by first considering the efficiency properties of the market damage measure (of which cost of completion is a subset). The sample cases we examined in Part I typically involved bundled contracts where the buyer prepaid for the contract service. But to generalize the analysis we begin by first assuming

11 Arthur Linton Corbin, Corbin on Contracts § 1068 (1993). For discussion, see William F. Fritz, "Underliquidated" Damages as Limitation of Liability, 33 Tex. L. Rev. 196, 199–209 (1954) (arguing that agreement for "plainly excessive liquidated damages" is "properly rejected" by a court, but agreement for "plainly inadequate liquidated damages" should be upheld).

72. U.C.C. § 2-718 cmt. n.1 ("A term fixing unreasonably large liquidated damages is expressly made void as a penalty. An unreasonably small amount . . . might be stricken under the section on unconscionable contracts or clauses.").

73. E.g., Vezina v. Nautilus Pools, Inc., 610 A.2d 1312 (Conn. App. Ct. 1992) (individual home owner); *Grossman*, 414 So. 2d at 1037 (same); Wells v. Minor, 578 N.E.2d 1337 (Ill. App. Ct. 1991) (same); Hansen v. Andersen, 71 N.W.2d 921 (Iowa 1955) (granary for individual farmer); Dimick v. J.K. Noonan, 242 S.W.2d 599 (Mo. Ct. App. 1951) (small property owner); Lyon v. Belosky Constr. Inc., 669 N.Y.S.2d 400 (App. Div. 1998) (individual home owner); J.G. Jansen, Inc. v. Rilling, 232 N.W. 887 (Wis. 1930) (same). But see Rock Island Improvement Co. v. Helmerich & Payne, Inc., 698 F.2d 1075 (10th Cir. 1983) (commercial lessor); Fort Wallin of Lake Tahoe, Inc. v. Commercial Cabinet Co., 784 P.2d 954 (Nev. 1989) (incorporated resort).

74. Recall that contracts where there is credible evidence of aesthetic value are the noteworthy exception to the conclusion that the market delta measure has emerged as the majority default in economic waste cases. See supra notes 50–53 and accompanying text.

that the buyer does not prepay. To understand why, recall that market damages award the buyer the difference between the price of a substitute and the price of the contracted performance. These damages thus rest on the implicit premise that the buyer will cover when cover would be efficient. This premise, in turn, is more likely to hold when the buyer either has not prepaid the contract seller or gets restitution of the contract price from her. In Part III, we analyze cases where the buyer has prepaid but restitution of the contract price is administratively unfeasible. Courts can effect restitution in these cases, and thereby apply the market damage measure, only by awarding buyers the cost of completion: the full ex post market price of the contracted performance. The argument made in Part II for market damages carries over to the cases we consider in Part III, but these cases merit separate consideration.

We make one further clarifying remark. In analyzing the market delta measure, we assume that buyer values are unverifiable. When buyer values are verifiable, courts award direct expectation damages—the difference between value and contract price. Therefore, the market delta measure only applies when the value a buyer would have realized from performance is unverifiable.

The model we introduce in Part II analyzes the performance of market damages on the three efficiency goals of contract law: efficient trade, efficient investment, and efficient contracting. We show that (a) parties trade efficiently under market damages; (b) using the market delta rule rather than awarding market damages in all cases misallocates resources because it causes sellers to enter the market in inefficiently large numbers and may cause buyers to exit inefficiently; (c) market damages do not impair investment incentives;[75] and (d) protecting the parties' expectations with market damages maximizes the probability that parties will make efficient contracts.

A. *The Model's Assumptions*

Sellers in a competitive market offer a service. Each seller incurs a fixed cost, denoted F, and produces the service at a constant marginal cost of c over some range $[0, z]$, and at an infinite marginal cost thereafter. Hence, z is the seller's "capacity constraint." Price equals cost in competitive markets, so the competitive price for the service is $p^* = \frac{F}{z} + c$. A portion of the price covers the seller's fixed costs; the rest covers her marginal costs.[76]

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75. Standard contract theory results hold that no damage measure always yields efficient investment, and the direct expectation damage measure sometimes undermines investment incentives. The market damage measure does not condition on the parties' investment actions, and so it cannot further impair their investment incentives.

76. We assume that markets are competitive for two reasons. First, the markets in the cases usually involve construction or mining, which are competitive industries. Second, a competitive equilibrium is unique; hence, assuming that markets are competitive permits us to compare market damages to the market delta under the same conditions. The set of

Buyers and sellers make contracts at t^0. When contracts are made, sellers know only the distribution from which their marginal cost c later will be drawn and, similarly, buyers know only the distribution from which their market value of a seller's performance will later be drawn. At t^1, the parties learn their costs and values for the relevant market period (i.e., each seller takes one draw from the cost distribution and each buyer takes one draw from the value distribution). At t^2, sellers who have decided to perform the contracted service tender performance and buyers either accept and pay the contract price or breach and pay market damages. If a seller breaches, her buyer seeks market damages. When market damages greatly exceed the market value to the buyer of the breaching seller's performance, the seller asks the court to restrict her buyer to the market delta, denoted Δ_m. We first analyze the case in which courts refuse this request and award market damages, and then turn to the case in which courts grant the seller's request and award only the market delta. Sellers and buyers are risk neutral and there is free entry to the market.[77]

For convenience, we assume that a seller's marginal costs are distributed uniformly on the unit interval. This means that each marginal cost realization is equally likely and that realized marginal costs lie between zero and one. To simplify computation, we let the fixed cost element of the price, $\frac{F}{z}$ equal 1. The competitive price thus equals $1 + c$.

Each buyer whose expected valuation exceeds the competitive price signs a contract to purchase one unit of the relevant service. For example, the contract unit requires the seller to restore a plot of land. A buyer's value for this service unit is composed of two elements. First, the seller's performance may affect the market value of the buyer's property. A nonconforming performance leaves this value unchanged at an assumed value of 1. Possible increases in market value above one are assumed to be uniformly distributed between $[1, 2]$.[78] Second, buyers may realize a surplus above any increase in market value due to the seller's performance. Formally, the buyer expects to value her seller's performance at $6v_m$, where v_m is the market value the buyer's property would have if the seller performs and $6 \geq 1$. Hence, $6v_m$ is the full gain, gross of the contract price, that the buyer expects to realize.

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possible noncompetitive equilibria is very large, so relaxing our competitive market assumption would greatly complicate the analysis without yielding much additional insight.

77. This assumption holds that a new seller can provide the service at the incumbent seller's costs.

78. A market cannot form unless buyers expect to earn returns that exceed seller's' costs. Since the seller's fixed costs are one, assuming that a buyer's market values are one or more thus makes the problem nontrivial. Further, by assuming that a buyer's market value is bounded from below by one, we do not permit a seller's performance to have negative expected value. Thus, if the seller agrees to construct a shed on the buyer's land, the shed may increase the land's market value, but is expected not to decrease its value. This assumption is meant to exclude weird cases in which buyers purchase services that likely will reduce the value of their property. The results below hold for any symmetric distribution, but the uniform is easy to work with.

Courts observe market values but neither courts nor sellers observe σ. Therefore, the value a buyer places on performance is private information.[79] Values and marginal costs are purely stochastic (i.e., not within a party's power to affect). This assumption is relaxed later.

There are $N > 0$ buyers and $M > 0$ firms.[80] Equilibrium in this model is defined by the buyer/seller ratio, $\lambda \equiv \frac{N}{M}$ and the contract price such that: (a) all sellers earn zero expected profits (this follows from the free entry condition); and (b) no seller could profitably alter its output (i.e., sell to fewer or more than λ buyers). This second condition holds that expected supply (the number of contracts a firm is prepared to offer) equals expected demand (the number of buyers that are expected to visit the firm). When this condition is satisfied, the number of firms in the market is bounded at M. A potential entrant would expect to sell to less than λ buyers; this would yield negative expected profits when the expected profits of incumbent firms are zero at λ demand.[81]

Turning to prices and possible gains, the expected value of one draw from a distribution that is uniformly distributed between zero and one is $\frac{1}{2}$.[82] Since price equals expected cost in a competitive market, the contract price of the service is

$$p_k{}^* = \frac{F}{z} + c = 1 + c = 1 + \frac{1}{2} = \frac{3}{2}.$$

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79. For example, if the market value of the buyer's property would have been 1.6 if the seller performed and $\sigma = 1.25$, the actual value of the seller's performance to the buyer would have been 2.0. A court and the seller only know that the buyer's actual value would have been at least 1.6. The assumption that σ is private information is made for three reasons. The first is realism. The sellers we consider offer services to a heterogeneous set of buyers. A seller, for example, may construct buildings for disparate individuals and firms. She is unlikely to know the valuations of most of these buyers. The second reason is that renegotiation is difficult when information is private. We are interested in the efficient default, and so largely want to abstract from renegotiation. For further motivation along this line, see supra note 54. Third, the court can observe market values, so if the court also can observe σ, then the court would know the buyer's actual value. In this event, the court could award direct expectation damages.

80. Market damages presuppose a market. Thus, we analyze market performance. When there is considerable heterogeneity in supply, controversy can exist as to whether a buyer's substitute purchase would be sufficiently "like" the contracted service so that the contract-price/market-price formula is appropriate. In such cases, direct expectation damages or specific performance may be more apt. We abstract from these difficulties by assuming considerable homogeneity in supply. For example, one plumber is much like another plumber. Our analysis applies only in these domains.

81. To be precise, posit a consumer firm ratio of $\eta < \lambda$. If a market seller earns zero profits when her revenue is $p * \lambda$, a new entrant must expect to earn $p * \eta < 0$.

82. Formally, for a uniform distribution, $U \sim [0,1]$, the order statistic is that the largest of n draws has expectation $\frac{N}{n+1}$. Since each seller is assumed to take one draw from the marginal cost distribution ($n = 1$), the largest marginal cost value is expected to be one half, which implies that the smallest value also is one half. Thus, the expected value of a single draw—of the seller's marginal cost—is one half.

The market value of a seller's performance is uniformly distributed on [1, 2]; hence, the expected market value of performance to the buyer is $\frac{3}{2}$. A buyer's total expected value, $6\left(\frac{3}{2}\right)$ exceeds $\frac{3}{2}$ because 6 is assumed to exceed one. Hence, buyers have an incentive to enter the market.[83]

B. *Damage Measures and Ex Post Efficiency*

We show by example that a buyer who can always recover market damages will only trade when trade is efficient. To begin, let a seller's marginal costs turn out to be either "low" or "high." Low costs are assumed to be $\frac{1}{3}$ and high costs are $\frac{2}{3}$. When marginal costs are low, the ex post market price, which equals a seller's cost to perform, is $1 + \frac{1}{3} = \frac{4}{3}$, which is less than the contract price of $\frac{3}{2}$. Sellers therefore tender performance. Buyers realize a gain in market value from performance of v_m, so a particular buyer's realized value is $6_i v_m$ ($i \in [1, \ldots N]$), which we denote v_i. Buyers with valuations above the contract price of $\frac{3}{2}$ will accept and pay for the service voluntarily. A buyer whose realized value for the service is below $\frac{3}{2}$ must pay the seller damages equal to the contract price less the ex post market price, or $\frac{3}{2} - \frac{4}{3}$. The anticipation of a damage award therefore will compel a disappointed buyer to comply with the contract if and only if $\frac{3}{2} - v_i < \frac{3}{2} - \frac{4}{3}$, where the left hand side is the buyer's loss from trade and the right hand side is the seller's market damages. The inequality holds only when $v_i > \frac{4}{3}$, which is the seller's cost. The market damage remedy thus yields ex post efficiency: Buyers whose realized values exceed the seller's cost trade, and the remainder pay damages of $\frac{3}{2} - \frac{4}{3}$ = $\frac{1}{6}$ = .17.

Suppose next that sellers realize the high marginal cost of $\frac{2}{3}$. The ex post market price becomes $\frac{5}{3}$, which exceeds the contract price of $\frac{3}{2}$, so every seller prefers to breach her contracts. Market damages for the buyer are the ex post market price of $\frac{5}{3}$ less the contract price, or $\frac{5}{3} - \frac{3}{2} = \frac{1}{6}$. Again letting a buyer's value be $6_i v_m = v_i$, buyers purchase a substitute performance if and only if $\left(v_i - \frac{5}{3}\right) + \frac{1}{6} > \frac{1}{6}$. The first term on the left hand side is the net gain the buyer makes when he buys a substitute and the second term is market damages. Thus, the left hand side is the profit the buyer would make if he covered and sued for damages. The right hand side term is the market damages the buyer would get if he sought them but did not purchase a substitute. The inequality is satisfied, and the buyer covers, only if $v_i > \frac{5}{3}$. Since the seller's cost is $\frac{5}{3}$, market damages again yield ex post efficiency: Only buyers with realized values above sellers' costs will trade.

The example also shows that market damages will not produce "economic waste." First consider the low-cost case, in which sellers tender

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performance. Buyers breach when their valuations lie on the interval $[0, \frac{4}{3}]$. To generalize, buyers breach when their realized valuations are less than the ex post market price. Let the total number of such buyers in the market be Q. Recall that each firm made contracts with $\lambda = \frac{N}{M}$ buyers. Given breach, at t^2 each seller fulfills contracts with $\frac{(N-Q)}{M}$ buyers. A seller will not replace a breached contract by trading with one of the Q buyers. The seller does better suing for damages than trading for less than the current price and a Q buyer would only pay less because the current price exceeds his valuation. Hence, a breached-against seller will collect damages and put the monetary award to an alternative use. Now consider the high-cost case, in which sellers breach because their cost of performance exceeds the contract price. In this case, the buyer trades efficiently under any damage measure. To see why, let damages be an arbitrary value d. Then the buyer trades when $v - p_m + d \geq d$, where the left hand side of this inequality is the gain the buyer makes when he covers plus his damages, and the right hand side is damages. The inequality reduces to $v \geq p_m$. Since p_m equals a seller's costs in a competitive market, the buyer covers if and only if his value exceeds performance costs. The remaining buyers will sue but they will not cover.

The analysis in Part II.B is meant to show how market damages work. We next use the example to illustrate the allocative inefficiency that results from the market delta rule, which awards market damages to sellers in all cases but denies market damages to buyers when the damages seem overcompensatory.

C. *Allocative Efficiency*

1. *Under Market Damages Always.* — Beginning with sellers, each seller in the example above makes contracts with λ buyers. In the low-cost case, a seller expects to earn a total net profit of $.17\lambda$: the contract price less the cost of performance $\frac{3}{2} - \frac{4}{3} = .17$ from the fraction of contract buyers who perform, and damages of $d = .17$ from the remaining fraction of contract buyers who breach. In the high-cost case, the seller expects to breach and pay the difference between the ex post cost of performing the service and the contract price $(\frac{5}{3} - \frac{3}{2})$ to every contract buyer, thus realizing an expected loss of $.17\lambda$. The high and low-cost cases are equally likely because the seller's cost distribution is symmetric. Hence, a seller's total expected gain is $\lambda[.5(.17) + .5(-.17)] = 0$. Market damages thus satisfy the equilibrium condition that sellers expect to make zero profits. Though there is free entry, no more than M sellers will be in the market. Turning to buyers, a buyer efficiently enters (in the model so far) when his expected valuation for the contract performance exceeds its price. Under a market-damages-always rule, this buyer is held liable if he

breaches and can hold the seller liable if the seller breaches. As with sellers, these damages exactly offset so that the buyer enters efficiently.[84]

2. *Under the Market Delta Rule.* — We show here that the market delta rule creates allocative inefficiencies on both sides of the market, but the effect is more significant on the seller side. Beginning again with sellers, suppose that a breached-against buyer can recover only the diminution in market value when that diminution is much below market damages. The market delta for a buyer is $\Delta_m = v_m - 1$.[85] Continuing with our example, let costs be high $\left(\frac{5}{3}\right)$ so that sellers breach, and assume that a buyer whose market value from performance is below one standard deviation from the mean can recover only Δ_m. When buyer market values are distributed uniformly on $[1, 2]$, one standard deviation is 1.29.[86] Under this version of the market delta rule, the seller pays market damages to 70% of its buyers (those whose market values would increase by more than 1.29), and pays market delta damages to the remainder. Recalling that λ is the number of buyers who visit a seller, a breaching seller expects to lose

$$-\lambda\left[.7(.17) + .3 \int_0^{.29} v_m dv\right] = -\lambda(.144)$$

Under the market delta rule, therefore, a seller's total expected return from making contracts at the competitive price $p_k{}^*$ is positive: $\lambda[.5(.17) + .5(-.144)] = .013\lambda > 0$. The first term in brackets is the seller's expected gain in the low-cost state; the second term is the seller's expected loss in the high-cost state. That sellers expect to earn positive profits under the market delta measure violates the equilibrium condition. In the efficient equilibrium, demand at each firm equaled $\frac{N}{M} = \lambda$. An additional entrant (there is free entry) would sell to fewer than λ buyers. But under the market delta rule, a new firm could enter profitably at $p_k{}^*$ because there are positive expected profits to capture. Entry will oc-

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84. The buyer in the example sues for damages or trades in the high-cost case and may be sued in the low-cost case. Since these cases are equally likely, and denoting as d the market damages that the buyer either collects or pays, the buyer will enter when $v_i - p_k +$ $[.5(+d) + .5(-d)] = v_i - p_k > 0$.

85. Recall that in the model a seller's performance can increase the buyer's market value from one to at most two. Hence, Δ_m must lie between zero and one. To better understand this aspect of the model, suppose that the contract requires the seller to move by tendering a performance, and then "nature" moves by selecting a state of the world. The combination of the seller's performance, had it been tendered, and nature's actual choice determines the market value the buyer's property would have had but for the breach.

86. For readers interested in where this value comes from, the uniform distribution is a beta distribution, which is a family of continuous probability distributions defined on the interval $[0,1]$ and parameterized by two positive shape parameters, denoted by α and β. The variance of a beta distribution is given by

$$\frac{\alpha\beta}{(\alpha + \beta)^2(\alpha + \beta + 1)}.$$

For the uniform distribution, $\alpha = \beta = 1$. Hence, the variance is $.083$. The standard deviation is the square root of variance, or $.29$.

cur until the marginal entrant would again expect to earn zero profits at the competitive price, but the new equilibrium buyer/seller ratio will fall below λ. The market has more firms than are necessary to sell to the N buyers.[87]

The intuition behind this result is straightforward. An asymmetry is created when buyers with low market value realizations can recover from breaching sellers only the increase in market value that a seller performance would have created, while sellers can recover market damages from every breaching buyer. Sellers then make greater gains in states of the world in which their costs turn out to be lower than they expect to lose in states in which their costs turn out to be high.[88]

The market delta rule also distorts buyer decisions to contract, but to a lesser extent. Buyers now are fully liable when they breach, but cannot hold sellers fully liable when sellers breach; some sellers pay only the market delta. On an expected basis, therefore, buyers thus recover less in damages when sellers breach than they must pay in damages when they breach. Since buyers now face a cost to enter the market, fewer buyers may make contracts.

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87. The analysis assumes a symmetric distribution of seller costs, such as the uniform or normal. Our results should hold under any distribution, however. The key point is that the market delta rule truncates the seller's damage liability in the high-cost state, regardless of the shape of the cost distribution, because the rule reduces the damages awarded to buyers with low value realizations. Whatever the relative magnitudes of the seller's loss in the high-cost state and gain in the low-cost state, the seller loses less under the market delta rule than under complete market damages. The market delta rule thus always creates an artificially high, state-imposed excess profit. It is this exogenously imposed and inescapable profit that drives the result that there will be excess seller entry.

88. Sellers will not lower price in response to an adoption of the market delta rule. To see why, realize that firms will not be in the market unless they earn nonnegative profits, and outside firms will enter the market only if they can earn positive profits. This implies that at the equilibrium price, market firms must earn zero profits. A zero profit outcome can occur only when the market price approximates firms' minimum average costs. And for this to occur, firms must be producing at the scale that minimizes average costs (i.e., market firms are at the efficient scale). Now let an exogenous legal change occur that permits market firms to earn positive profits without altering their technology, scale of production, or the quantity of deals they make. Since firms were producing at the efficient scale before this legal change, and supply equaled demand at the pre-change price $(p_k{}^*)$, no market firm has an incentive to alter its price. Rather, firms earn positive profits—i.e., "rents"—at the market price. But since now there are positive profits to make, new firms have an incentive to enter. The market delta rule is such an exogenous legal change: The rule increases market firms' expected profits without otherwise affecting technology or market supply and demand. Another way to put this result is that there is a contradiction between assuming that firms earn zero profits in competitive equilibria and that firms lower prices in response to exogenous changes. Market firms earn zero profits because outside firms are ready to enter if profits are positive, but outside firms would not hold themselves ready to enter if market firms always dissipated positive profits by lowering prices. See generally Andreu Mas-Colell, Michael D. Whinston & Jerry R. Green, Microeconomic Theory 311–43 (1995); Hal R. Varian, Microeconomic Analysis 215–30 (3d ed. 1992).

To see why seller decisions are affected more strongly than buyer decisions, denote the excess liability cost that the market delta rule imposes on the buyer as $-y$; the seller's gain, on any individual contract, thus is $+y$. Letting $Pr(y)$ be the probability that a buyer who contracts will be restricted to the market delta, the expected additional cost to a buyer is $Pr(y)(-y)$. The probability term will be small. Buyers have an incentive to enter the market when their expected valuations exceed the market price, which equals the seller's expected cost. The market delta measure is applied when the buyer's realized valuation is much below the ex post price (which equals the ex post seller cost). A buyer thus will expect the market delta rule to be applied against him only when his realized valuation turns out to be much below the seller's cost. Since the buyer's expected valuation exceeds the seller's expected cost, the buyer's expected "market delta valuation" must be at the low end of the possible valuations he may realize: $Pr(y)$, that is, is small. Thus, a switch to the market delta rule will not significantly affect an individual buyer's expected decision to contract for the seller's services. In contrast, the seller sells to a number of buyers, and thus aggregates the total market delta-expected losses of all of the buyers who contract with her. Using the notation above, a buyer's expected loss is $Pr(y)(-y)$ while a seller's expected gain is the sum

$$\sum_{1}^{\lambda} Pr(y_i) y.$$

The seller's gain much exceeds an individual buyer's loss because sellers commonly have a number of customers (i.e., λ is much bigger than one). As a consequence, the market delta rule deters few buyers from entering the market but materially encourages sellers to enter.[89]

There are three inefficiencies when a market has too many sellers relative to buyers. First, even though new entrants can sell the contract service at incumbents' costs when there is free entry, there commonly will be a cost to enter. For example, an outside firm must investigate the market in order to learn that there is a profit opportunity. This entry cost can be privately profitable to the new entrant when profits exist, but it is a social waste. Second, firms that enter the market likely will have been making zero profits elsewhere. Thus, the market delta rule misallocates resources. Firms will be induced to enter markets where they are not needed and to exit markets where their presence was necessary for competitive behavior. Third, when there are too many firms, each of them may be producing at less than the efficient scale.

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89. When a buyer prepays but the seller can keep the price, the buyer's total loss becomes $y + p_k$. This large loss may materially deter buyers from entering. We analyze the prepayment case infra Part III.B.

D. *The Investment Decision*

The preceding analysis assumed that buyers did not invest in the subject matter of the contract. We now relax this assumption to let the buyer's realized value be partly a function of his efforts (his reliance actions) and a stochastic state variable (e.g., later demand for property such as the buyer's). When a competitive market exists and seller performances are homogenous, the buyer invests efficiently. As Part II.B showed, the buyer trades in this case only when trade would be efficient. Hence the buyer will take into account that he will not trade in certain realized states of the world, and this will temper his reliance. When sellers supply services, however, it is realistic to assume that there is some heterogeneity in supply. In that circumstance, direct expectation damages conceivably could induce buyers to overinvest but market damages would not. The buyer's payoff under market damages is a function of the ex post market price and the ex ante contract price. The buyer cannot affect either variable by actions he takes after the contract is made that would increase the value to him of the seller's performance. And since we have just shown that the buyer will trade only when his realized valuation exceeds the seller's cost, the buyer will understand that his reliance expenses will be losses to him in low valuation states. Consequently, the buyer will rely until the expected gain—discounted by the possibility that there will be states in which he will not trade—equals the expected cost. This is the efficient amount of reliance.

E. *The Decision to Contract*

The analysis to this point *assumes* that parties make contracts but does not justify this assumption. To see why this is a concern, realize that an ex ante contract, made at t^0, will require the buyer to pay the t^0 market price. Let $k > 0$ be a fixed cost to contract. As above, we let the contract price be p_k and let the ex post market price be p_m. The parties expect, at t^0, that p_m will equal p_k.[90]

We begin our analysis with buyers. A buyer who makes a t^0 contract, we assume, can recover an arbitrary damage sum d if the seller breaches, where $0 \leq d < \infty$, but the buyer will be liable for d if he breaches. Part II.C supra showed that these gains and losses exactly offset when the damage rule is symmetric, so the buyer's expected damage exposure is zero. This analysis thus shows that buyers will not contract. Since $p_m = p_k$, a buyer's expected gain if he makes a contract is $v - p_k - k$. But the buyer's expected gain if he does not contract is the larger $v - p_k$. Since a buyer's expected gain is the same whether he contracts or not, and contracting is costly, buyers will not make contracts. To motivate contracting, then, an increase in the market price must impose a loss on the buyer that exceeds

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90. In an efficient market, the expected market price at any future time is equal to the current price plus an error term with mean zero.

the difference between the ex post and the ex ante market prices for the relevant goods or services.

In this Part, we make two claims. First, buyers may suffer such excess losses. To see how, let a buyer, as of t^0, expect to use the surplus from a time t^2 trade either to make a contribution to the reduction of fixed costs, to reward investors, or to finance another part of his business. If the buyer does not contract, the expected surplus, conditional on trading, is $v - p_k$; the buyer's expected t^2 value less the expected t^2 price. Suppose now that the market price rises to p_m, which is greater than the price, p_k, at which the buyer could have contracted. The buyer trades if his ex post value exceeds p_m and earns $v - p_m$. This is less than the surplus he expected to have, however, so he must make a lower contribution to other aspects of his business than he expected to make. A buyer without a contract thus can be "disrupted" by a price rise.[91] A contract permits the buyer to recover the damage measure d if the seller does not perform at the ex ante contract price of p_k, and d may partly or totally offset the cost of disruption. Our second claim, then, is that efficiency requires the damage measure d to equal market damages.

Beginning with the first claim, a buyer without a contract is not disrupted by every price increase. For example, the buyer can easily absorb the inability to make a deal at the expected price if the deal is small in relation to his business, or if the buyer lacks other opportunities that a large surplus could fund. Disruption costs are a function of the monetary gap between the expected surplus and its actual value, which is $p_m - p_k$, and the disruption loss per dollar of lost surplus, which is a function of the buyer's particular time t^2 circumstances. For convenience, we denote the buyer's expected disruption cost as $g = (p_m - p_k)x$, where x is a parameter representing the expected disruption loss per dollar lost.[92] Note that $g = 0$ if $p_m = p_k$; then the buyer's t^2 trading surplus equals his expected surplus. Disruption costs are at a maximum if $p_m = v$ because the buyer then cannot realize any surplus by trading. Finally, g becomes zero again when $p_m > v$. In these states, trading would produce a negative gain, so the buyer does not trade.

Therefore, there are three relevant time t^2 price ranges, as illustrated in Figure 1.

FIGURE 1

P_{min}_____(i)_____/P_m=P_k_____(ii)_____/P_{max}_____(iii)_____

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91. See Alan Schwartz & Robert E. Scott, Contract Theory and the Limits of Contract Law, 113 Yale L.J. 541, 562–65 (2003) [hereinafter Schwartz & Scott, Contract Theory] (introducing concept of disruption costs in model where buyer's value was fixed from time of contract to time of performance).

92. Formally, letting the largest possible ex post price be p_{max}, the disruption parameter g equals

$$\int_{p_k}^{P_{max}} \int_0^{X_{max}} X(p_m-p_k)\,dp_m dx.$$

The lowest possible ex post market price is the seller's fixed cost plus the lowest possible realized marginal cost; this price is denoted p_{min}. The highest possible ex post price is fixed cost plus the maximum realized marginal cost; this price is denoted p_{max}. The buyer's expected value, as of t^0, necessarily exceeds the expected ex post price, which in turn equals the contract price. A buyer without a contract will be happy if the ex post price falls in range (i). There can be no disruption then because $p_m < p_k$. Also, the buyer is free to purchase at p_m and he saves contracting costs. Suppose next that a buyer expects his realized value to lie in range (ii), between p_k and p_{max}. This buyer may be disrupted if he does not contract and if $p_k < p_m < v$.[93] The buyer expects to trade, but anticipates contributing only $v - p_m$ to defraying costs. On the other hand, the buyer must incur contracting costs to protect against this possible disruption. Finally, a contract would be most useful to the buyer if his expected value lies in range (iii); there, $v > p_{max}$. This buyer expects always to trade, and the probability that his realized surplus will be lower than his expected surplus—that $v_m > p_k$—is approximately one half without a contract.

Turning to our second claim, a buyer is most likely to contract efficiently at t^0 if he expects always to recover market damages. This is because market damages ensure that the buyer earns his expected value less the price, and thus reduce the disruption risk to zero. As a consequence, a buyer deciding whether to contract compares the disruption risk that a contract would eliminate to the cost of contracting. This is the correct comparison for efficiency purposes.[94]
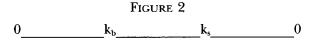
Four factors affect the buyer's decision: (a) the contracting cost k; (b) the magnitude of the disruption parameter x; (c) the distance between the buyer's expected value and the expected price p_k; and (d) the variance of the price distribution. Regarding the first two factors, parties are more likely to write an ex ante contract when the contracting cost is low and the potential for disruption is high. With respect to factor (c), a contract can be valuable when the buyer's expected value is far from the contract price (he expects his ex post value to lie in range (iii), for example) because then the potential for disruption is maximized. On the

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93. If the buyer's value is less than the ex post price, trade would produce disruption so the buyer will not trade.

94. For a proof, we assume that a buyer who contracts earns d when the seller breaches. Under symmetric damages, the buyer pays d when he breaches. The buyer's expected damage payments thus offset, except that the buyer can only be disrupted when the seller breaches, and then damages partly or totally offset the disruption cost g. The buyer's expected gain from entering the market, with or without a contract, is his expected value less the ex ante market price: $v - p_k$. The buyer thus contracts when $(v-p_k) - (g-d) - k > (v-p_k) - g$, where the left hand side is the buyer's contract payoff: expected gain less disruption offset by damages less contracting cost. The right hand side is the buyer's no contract payoff: expected gain less the full disruption cost. This inequality reduces to contract when $g - (g-d) > k$. Recalling that the expectation of receiving market damages totally offsets the expectation of disruption, when d is the market damage measure the second term on the left hand side becomes zero. The buyer thus contracts when $g > k$.

other hand, when the buyer's expected value lies close to the expected later price (i.e., to p_k), then the relevant part of range (ii) is small relative to range (i). In this case, the potential for disruption is low while the expected gain from not having a contract is high. This reasoning can be summarized in the remark that a buyer is more likely to contract when a contract would protect a large contracting gain. Regarding the last factor, the disruption cost g is the product of x, the disruption parameter, and the difference between the ex post market price and the contract price. The largest possible ex post market price—p_{max}—varies directly with the width of the price distribution (i.e. with variance). Variance is a measure of risk, so factor (d) actually holds that buyers are more likely to protect themselves with contracts when they face more risk.[95]

Sellers also can be disrupted. A seller expects to put the difference between the ex post price and her costs toward reducing fixed costs, or for other purposes. The seller without a contract thus can be disrupted if the ex post market price falls. Market damages also reduce this disruption risk to zero. Thus, under market damages, sellers enter only when their expected gain exceeds contracting cost. Since efficiency requires the buyer to expect at least market damages and also requires the seller to expect at least market damages, it follows that a *"market damages always" rule uniquely maximizes the probability that parties will make efficient forward contracts.* Figure 2 reflects this reasoning.

FIGURE 2

In the figure, the buyer's expected gain from contracting, when damages protect his expectation, is measured from left to right, and the seller's expected gain from contracting, when damages protect her expectation, is measured from right to left. The expected gain equals contracting costs for the buyer and the seller, respectively, at the points k_b and k_s. Parties contract when both of their expected gains are in the $[k_b, k_s]$ region. As is apparent, awarding a party more than market damages— pushing the buyer to the right or the seller to the left—reduces the probability that the other party will contract.

This conclusion implicitly assumes that giving buyers more than their expectation redistributes wealth between sellers and buyers but does not affect the width of the contracting zone. When parties plan to make interim investments, however, a penalty may increase the expected gain from contracting. The prospect that such a penalty may be imposed will not deter efficient contracting. To see why, consider Figure 3.

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95. We assume that the disruption parameter is asymmetric: The buyer does not benefit as much by a lower-than-expected price as he is harmed by a higher-than-expected price. We motivate this assumption with the following argument: Paying a lower price increases cash flow but is unlikely to cause the firm to scale up its current projects; paying a higher price may cause current projects to be disrupted.

FIGURE 3

0' _____ k_b _____ k_s _____ 0'

Figure 3 is Figure 2 spaced out; the 0 points are farther from each other, which is why they are denoted 0'. The extra spacing exists because the expected gain from contracting is greater than it would have been without the penalty. As a consequence, holding contracting costs fixed, the contracting zone [k_b, k_s] expands. The seller thus can be pushed farther to the right and still have an incentive to contract. In Part III we argue that market damages should be awarded in a context in which they would be partly penal because this increases the expected contracting gain. The analysis here shows that these awards will not reduce the probability that parties will write efficient contracts.

Our earlier conclusion that the market delta rule affects sellers more significantly than it affects buyers also holds in this more realistic framework. The buyer contracts when $g_b - \Pr(y)y - k > 0$. The disruption parameter g can be large because it varies directly with the buyer's value and this value is unbounded from above. In Part II.C, we showed that the second term—the buyer's loss from application of the market delta rule—is likely to be small for an individual buyer. Thus, the market delta rule may not cause many buyers to exit the market. The seller contracts when

$$g_s + \sum_1^\lambda \Pr(y)y - k > 0.$$

Part II.C also showed that the second positive term—the seller's gain from the marginal delta rule—may be large. Therefore, the market delta rule may encourage sellers to enter the market when the disruption risk alone would not do so. The rule thus inefficiently encourages sellers and may inefficiently discourage marginal buyers. The cumulative effect can cause a market to be far from the pareto frontier.

F. *Summary*

This model supports the claim that *when a market for the contract goods or services exists,* market damages are preferable to the market delta measure on both efficiency and fairness grounds. These damages induce trade only when trade is efficient and induce the correct number of parties to enter the market. Moreover, market damages maximize the probability that parties will contract efficiently. Market damages thus are both ex post and ex ante efficient. The market delta rule does not produce inefficient trade, but this measure is ex ante inefficient because it induces excessive entry into the market by sellers and may also distort buyers' incentives to contract.

Further, the market delta rule violates the compensation norm more seriously than does a market damage measure. Under the market delta rule, the buyer is undercompensated whenever the actual value he would

have derived from a seller's performance exceeds its market value. Since buyers commonly do value seller performances in excess of their market values (as implied by the decision to contract ex ante for the seller's services), the market delta rule undercompensates buyers in the usual case.[96] By contrast, market damages overcompensate buyers only when performance of the contract service would have been inefficient ex post. But courts often will not know whether performance would have been efficient or not. This is because, as in the model we present here, buyer values often are unverifiable. In such cases, contract law's well-grounded commitment to the compensation norm should persuade courts to award market damages whenever the buyer asks for them.

III. COST-OF-COMPLETION DAMAGES, RESTITUTION, AND SELLER PRECAUTIONS

In Part III, we consider cases in which the buyer prepays for a contract service that is bundled with other tasks. If the seller breaches, this buyer has a claim for restitution of the price and a claim for market damages; both claims are vindicated by awarding the buyer the full cost of completion. We develop additional efficiency justifications for awarding market damages in this context, but before discussing them it is helpful to ask why the buyer prefers to bundle the service in question with other services in a "master agreement." The buyer's alternative is to make a separate decision whether to buy the repair or restoration service after the initial contract is performed. Waiting permits the buyer to make an informed comparison between the current cost of the service and the current value gain. Buyers forego the advantage of acting on current information when there are economies of scope. In particular, there are two advantages to bundling the services in an ex ante contract. First, a seller who is working on the property, such as the mining company in *Peevyhouse*,[97] may know more about the property's features than an outsider could easily ascertain. Similarly, a contractor who has undertaken to assemble the construction materials and supervise their installation by subcontractors is better able to assess how best to correct defective construction than can a third party called in to effect a repair after the job is complete. The seller can use this information to make the most cost-effective restoration or repair choices. Second, the seller sometimes is able to adjust her performance along the way so as to reduce later restoration or repair costs. Buyers purchase restoration or repair services in the

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96. The market value of a seller's performance is assumed to be distributed uniformly on the interval $[1, 2]$. Hence, the buyer expects that value to have a mean of 1.5, and his expected value is b times that. We assume for convenience that b is invariant to the market value of performance. Thus, b, and hence the percent increase above the market value, is the same for every realized market value. If b is thought to increase with market value, then the argument just made overstates the extent to which the market delta rule undercompensates buyers.

97. Peevyhouse v. Garland Coal & Mining Co., 382 P.2d 109 (Okla. 1962).

ex ante contract, therefore, when these efficiencies outweigh the benefit of resolving the question of whether to restore or repair when the buyer is better informed.

Master contracts usually have a single price, which may create a problem for courts. A court cannot precisely compare the contract price for the service with the market delta unless the court can disaggregate the single contract price into its constituent elements. This will often be difficult to do.[98] Courts that continue to follow the market delta rule thus may think that the windfall loss concern is more compelling in the case of bundled tasks for which the buyer has prepaid, because the restitution claim is smaller in that case and the market damage claim proportionately larger.[99] As a consequence, market damages are more likely to be substantially above the market delta in the prepayment context.

To be sure, the inability to make precise comparisons would not be a problem for a court that is persuaded by the arguments advanced above to abandon the market delta rule. Such a court can satisfy the buyer's claims to restitution and market damages by awarding the cost of completion without having to know which portion of this award applies to the prepaid price. Moreover, there is a corrective justice argument against awarding only the market delta when the buyer prepays. According to conventional moral notions, a seller wrongs her buyer by accepting payment for a performance she deliberately fails to render. When the buyer is restricted to the market delta, the wrong remains uncorrected because the seller retains the price. Cost-of-completion damages are more just because they recognize the buyer's restitution claim.[100] This corrective justice case may offset the windfall loss case for the market delta rule.

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98. Parties will separately price elements of a seller's performance when the gains from a more explicit identification exceed the pricing costs. In many contexts, pricing costs preclude much explicit identification. In addition, the seller may have joint costs, so there is no natural price for any segment of her performance. Our argument applies when these difficulties prevent separate pricing. As examples of the argument's ample domain, the standard form AIA Construction Contract contains no provisions that disaggregate the price of an initial installation and the price of the warranty to repair or replace defective construction, and the decided cases seldom exhibit detailed price breakdowns. Indeed, in none of the cases in our sample did the facts suggest that the price of the initial installation and the price of the warranty to repair or replace were disaggregated.

99. As we showed in the Introduction, the cost of completion is the sum of the contract price and market damages. See supra notes 22–25 and accompanying text. Because bundling is efficient, the shadow contract price of the service is lower than the price would be if the service had been separately priced. The lower the contract price, the greater the share of a cost-of-completion award that market damages comprise.

100. A person has a duty in corrective justice to repair a first-order wrong. The common example of such a wrong is a violation of the duty of care, but the duty to repair applies to first-order wrongs generally. A breach of contract that entails refusing to perform when performance has been paid for also is a first-order wrong. In this connection, see Ernest J. Weinrib, Punishment and Disgorgement as Contract Remedies, 78 Chi.-Kent L. Rev. 55, 59 (2003) ("Corrective justice views the remedy imposed on the defendant as correcting the injustice suffered by the plaintiff."); cf. Curtis Bridgeman, Reconciling Strict Liability with Corrective Justice in Contract Law, 75 Fordham L. Rev.

Nevertheless, for courts and commentators who remain concerned about the magnitude of a seller's windfall loss, we develop two additional efficiency arguments in favor of market damages whenever buyers prepay.

The first argument focuses on the costs for buyers who would otherwise choose to purchase bundled services. Awarding the market delta rather than cost-of-completion damages when the buyer prepays causes contract buyers to earn negative returns when their valuations turn out to be low. This possibility reduces the expected return from entering the market to make bundled contracts. Buyers for whom this return falls below the contract price will not contract ex ante for the seller's repair or restoration services. Since bundling is efficient relative to the separate purchase of services, driving these buyers into the spot market (or excluding them altogether) reduces welfare. The second efficiency argument applies when the seller can take an efficient interim precaution. The precaution would reduce the cost of performing the contract service to below the buyer's value, but a seller who can retain the price and pay only market delta damages often has little incentive to take the precaution. In contrast, cost-of-completion damages create a strong incentive for sellers to take efficient precautions.

A. *Restitution and the Buyer's Decision to Contract*

The market delta rule does not cause inefficient trade, but the combination of prepayment and market delta damages inefficiently deters some buyers from entering the market and contracting for bundled services. To elaborate this argument, begin with sellers. In the high-cost case, the seller breaches when she is not prepaid, so permitting her to retain the price cannot produce more breach. Turning to the low-cost case, and using the model in Part II, buyer market values are uniformly distributed between [1, 2]. Hence, the mean expected ex post buyer market value is 1.5, so the mean market delta is 0.5. A seller who plans always to breach and retain the price expects to earn nothing. The seller collects the 1.5 price, pays damages of 0.5 to buyers, and therefore realizes 1 per sale. This 1 is exhausted in defraying the seller's fixed cost of 1, however. In contrast, a seller who plans always to perform, thereby never having to pay damages, earns price less marginal cost of $\frac{3}{2} - \frac{1}{3} = \frac{7}{6}$. She allocates 1 to fixed cost and nets a positive gain of $\frac{1}{6}$ = .17. Hence, when sellers can retain the price and pay only the market delta, they breach in the high-cost case and perform efficiently in the low-cost case.

The inefficiency, however, is on the buyer side. The model above showed that when buyers either do not prepay or get restitution of the price, market damages yield efficient trade. Since cost-of-completion damages entail restitution, buyers who trade when they should and receive cost-of-completion damages earn their expectancy even though a

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3013, 3014 (2007) (noting that contract law "seeks to correct for the frustration of entitlements to performance").

contract seller can retain the price.[101] But in contrast, buyers incur losses if they do not trade and they are restricted to recovery of the market delta. The market delta is the net market value gain that performance would have produced for the buyer while the *larger* prepaid price is the mean of the marginal cost distribution *plus* the seller's fixed cost.[102] Thus, buyers who are not myopic anticipate that they will incur losses in states of the world in which their valuations turn out to be relatively low. Not only will these buyers receive less in damages when their sellers breach than the sellers will recover when the buyers breach, but the buyers also forfeit the prepaid price. These cumulative losses will discourage some buyers from entering the market to purchase the seller's services in the ex ante contract.[103] Deterring buyers from contracting ex ante for repair or restoration services is inefficient because buyers prepay (i.e., they purchase services as part of a master contract) when economies of scope exist. Recalling the corrective justice point made earlier, we thus conclude: *When the buyer has prepaid for the contract service, both efficiency and fairness justify awarding cost-of-completion damages even when these would much exceed the market delta.*

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101. To make this clear, recall that cost-of-completion damages are the ex post market price, p_m. Thus a buyer who prepays, later trades, and recovers cost-of-completion damages earns $(v-p_m) + (p_m - p_k) = (v-p_k)$, which is the buyer's expectation. The first term on the left hand side of this equation is the buyer's value less the cover price, the second term is cost-of-completion damages, and the third term is the prepaid price that the contract seller retains.

102. A prepaying buyer who does not trade and who is restricted to recovery of the market delta earns $\Delta_m - p_k$. This will be negative if $\Delta_m < p_k$, or if

$$v_m - 1 < 1 + \frac{c_{max} - c_{min}}{2} \, ,$$

where the left hand side is the market delta (ex post market value minus minimum market value) and the right hand side is the contract price (fixed cost plus the mean of the marginal cost distribution). Rearranging terms yields

$$v_m - 2 < \frac{c_{max} - c_{min}}{2} \, .$$

This inequality is always satisfied because $v_m \leq 2$ (the buyer's realized market value is bounded from above by 2) and the right hand side is positive. Hence, the market delta is always less than the contract price, so the nontrading buyer incurs a loss when the seller retains the price and pays only the market delta.

103. In Part II, we showed that when buyers do not prepay, the market delta rule materially encourages sellers to enter the market, but seldom will materially deter buyer entry. When buyers prepay and sellers can retain the money without doing the work, the incentive of sellers to enter is further increased, but now buyers are materially discouraged from contracting. Parts II.C and II.E showed that buyer losses and seller gains do not offset. In the prepayment context, therefore, the entry decisions of both sides of the market are substantially distorted.

B. *The Precaution Dimension: Redoing Work and Improving Contractual Incentives*

Prepayment creates an incentive for the seller to behave strategically in the two contexts that we analyze in this Part. The first is a construction contract under which the seller is hired to perform a job composed of several separate acts and the buyer makes a total payment for the entire job. In the second situation, the buyer accepts a lower payment from the seller than he otherwise would in return for the seller's performance of a task for the buyer. As an illustration, suppose the seller buys the right to mine on the buyer's property in return for a royalty and an agreement to restore the property at the end of the lease term. The royalty payments the seller makes to the buyer are lower because of the restoration obligation. In both of these situations, the seller can increase her payoff by retaining the price allocated to the relevant service or by paying the lower royalty but not doing the work.[104]

Our analysis of these situations rests on four key assumptions. First, the contract requires the seller to take a certain action—for example, to restore or correct any defect in performing the main job. We assume that the seller can take a related action during the course of performance. This related action is denoted a "precaution" because taking it reduces the expected cost of the contractually required action to less than its expected value to the buyer. Thus, if the contractually-required action is restoration, the precaution may be conducting mining operations so as to facilitate restoration. The failure to take the precaution is denoted "shirking." Second, the buyer is an imperfect monitor. He may not be an expert and monitoring is costly. The precaution is contractually required, either directly or indirectly.[105] Therefore, the buyer, we suppose, will require the seller to take the precaution if the buyer observes the seller shirking, but he may fail to detect shirking. Third, the seller's failure to take the precaution may never be discovered, or only discovered much later. As an illustration, the seller may not have checked whether the floors have sufficient structural support but this may not be known for years because the floors are covered with carpet or tile. Alternatively, something obviously is wrong ex post, but it is not obvious that the problem is a consequence of the seller's breach. For example, it turns out to be quite expensive to restore a property after it has been mined, but

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104. A seller is "prepaid," as the term is used in this Article, when she is actually prepaid or when she can expect to keep the contract price less possible market delta damages. For example, in *Jacob & Youngs*, the final payment was not due until the contractor had completed performance of the full job. Jacob & Youngs, Inc. v. Kent, 129 N.E. 889, 890 (N.Y. 1921). Nevertheless, the contractor had been prepaid because the market delta rule creates in such sellers the expectation that they can keep the final payment less only the market delta when they breach. Id.

105. For example, the contract may regulate the manner in which a seller mines to ensure that restoration will be feasible ex post. The seller's duty of good faith also requires her to take cost-justified actions that further the common venture.

whether the seller mined with restoration in mind or whether restoration would have been materially less expensive if she had are difficult to know. Fourth, the seller or a third party could perform the contractually-required action ex post, but the action is much more expensive than if the precaution had been taken.[106]

The seller is liable if the buyer discovers within the statute of limitations that she shirked. Under current law, the breaching seller pays cost-of-completion damages when these approximate or are below the market delta.[107] Under the economic waste test, however, the seller is liable only for the market delta if the action appears inefficient ex post (i.e., the cost of completion much exceeds Δ_m). To understand the effect of this rule, consider that the seller should take the precaution because the precaution helps to ensure that the contractually-required action is cost-justified. A corollary to this conclusion holds that if the seller shirks, the action may ultimately not be cost-justified. Under current law, the likely sanction that the seller faces if she fails to take the precaution, and later fails to perform the contractually-required action, is the low market delta. Therefore, when courts focus on the ex post comparison between the cost of performance and its value, they create an incentive for sellers to tilt that comparison in their favor by not taking efficient precautions. Thus, the law encourages moral hazard.[108]

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106. The first assumption holds that an effective precaution is available. We do not have a policy recommendation if the cost of completion turns out to be very high through no fault of the seller. The second and third assumptions make two claims: (a) The buyer does not invest to help ensure that the cost of completion is low; and (b) a buyer who discovers shirking will not let shirking go unnoted in order to hold the seller up later for a large damage payment. Our model, that is, analyzes one-sided moral hazard—the seller's incentive to shirk—rather than two-sided moral hazard—both parties' incentives to shirk. Claim (a) is made for realism. A person or firm who commissions a building, for example, seldom participates in its construction. Claim (b) is made partly for realism. In construction and similar cases, parties use an architect who has a duty to speak. Also, a buyer who could prevent shirking but remains silent in order to extort violates his duty of good faith, and so is disabled from recovering anything.

107. See supra notes 42–44 and accompanying text (discussing cases awarding cost-of-completion damages).

108. All of the assumed conditions that create a perverse incentive for the seller to shirk by failing to take the efficient precaution were present, in fact, in the case of *Jacob & Youngs*, 129 N.E. 889. Note, for example, the dissenting opinion of Justice McLaughlin, who recited the following facts from the record:

Under its contract [the plaintiff] obligated itself to use in the plumbing only pipe (between 2,000 and 2,500 feet) made by the Reading Manufacturing Company. The first pipe delivered was about 1,000 feet and the plaintiff's superintendent then called the attention of the foreman of the subcontractor, who was doing the plumbing, to the fact that the specifications annexed to the contract required all pipe used in the plumbing to be of the Reading Manufacturing Company. They then examined it for the purpose of ascertaining whether this delivery was of that manufacture and found it was. Thereafter, as pipe was required in the progress of the work, the foreman of the subcontractor would leave word at its shop that he wanted a specified number of feet of pipe, without in any way indicating of what manufacture. Pipe would thereafter be delivered and installed in the

The theoretically efficient remedy when one party misbehaves because the other party is an imperfect monitor (here the buyer cannot always observe the failure to take the precaution) is a penalty that is partly a function of the likelihood of nondiscovery.[109] This penalty, we show, cannot be implemented on the information structure assumed here. The efficient penalty is reasonably well approximated, however, by an award of cost-of-completion damages.

To support these conclusions formally, we modify the model set out in Part II. The required action costs c (including the precaution) if the precaution is taken but costs $C > c$ if the seller shirks. The contract price of the action is p_k and the ex post market price is p_m. The contract price may be implicit. Because we assume competitive markets, price equals cost: $p_k = c$; $p_m = C$. Therefore, p_m is the cost of completion. The buyer values the contractually required action at v and the action will increase the market value of the buyer's property by Δ_m. We assume that $v > c$; the precaution is efficient because taking it reduces the total cost of the contractually required action to below its value. The buyer discovers breach with probability η, where $0 \leq \eta \leq 1$.[110]

The parties contract at t^0. The seller will take the precaution at t^1 if the expected damages she would pay for breaching the contract (e.g., not restoring) exceed the contract price of the action. If the seller chooses not to take the precaution, she waits until t^{1+} to see whether the buyer will discover her omission. If she is discovered, she will then take the precau-

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building, without any examination whatever. Indeed, no examination, so far as appears, was made by the plaintiff, the subcontractor, defendant's architect, or any one else, of any of the pipe except the first delivery, until after the building had been completed.

Id. at 890, 892 (McLaughlin, J., dissenting).

Here, each of our four assumptions were satisfied. There was (1) an apparently efficient precaution—checking the pipe as it was delivered to insure that it met contract specifications; (2) evidence that the owner, through his architect, was an imperfect monitor (he was able conveniently to check only the first installment of pipe but not the remainder); (3) difficulty in discovering the unsatisfactory performance because most of the pipe was embedded in the walls of the house; and (4) a performance that was inefficient ex post: The high cost of removal caused the ex post market price of performance to exceed the market delta by so much as likely to exceed the buyer's value from performance.

109. See generally Steven Shavell, Foundations of the Economic Analysis of Law 482–83 (2004) (observing that "the sanction must equal the harm multiplied by the inverse of the probability of its imposition"); Gary S. Becker, Crime and Punishment: An Economic Approach, 76 J. Pol. Econ. 169, 207 (1968) (stating that optimal penalties for illegal actions account for costs of apprehension).

110. The model we use does not attempt to identify the general conditions under which parties should take precautions to reduce the probability of breach. Rather, as in contract-theory models generally, we assume that a party has an efficient action to take, and we then ask whether the law or a contract can induce the efficient action. Current law is the market delta rule and the current contracting space is truncated by the rule against penalty clauses. Our model asks whether the efficient action—here the taking of a precaution—can be induced when these legal rules obtain.

tion. If she is not discovered, she will both fail to take the precaution and fail to perform the contract action. A seller who breaches finishes the principal job (e.g., completes construction or mining) at t^2. If her breach is discovered then, she pays the damages the law requires; otherwise, she keeps the price. Since market values fluctuate, we assume that the realized market delta is below a "cutoff" cost of completion, denoted C_x, with probability $F(C_x)$. In these cases, a seller who is discovered pays Δ_m. The market delta thus exceeds the cutoff value with probability $1 - F(C_x)$, in which case the seller pays $p_m = C$.[111]

To see what the seller will do, consider that she earns a pure profit of zero if she takes the precaution. The seller has been paid p_k, which is the cost. Hence, she shirks if the expected gain from shirking and then breaching is positive. Expression (1) is the shirking condition:

(1) $(1 - \eta)p_k + \eta\{p_k - [F(C_x)\Delta_m + (1 - F(C_x)p_m]\} \geq 0$

The first term on the left hand side of Expression (1) is the expected value of breaching when it is not discovered: The seller then keeps the full price. The second term is the expected value of breaching when the buyer discovers it. The seller keeps the price less the terms in brackets, which sum to the expected damages from breach. If the market delta is less than the cutoff value for cost-of-completion damages, which occurs with probability $F(C_x)$, the seller pays the market delta; otherwise, she pays the cost of completion.

The first term in Expression (1) is positive. Hence, the seller shirks if the second term is positive, or if the second term is negative, but by less than the first term is positive. The second term can be positive because $p_k > \Delta_m$.[112] The likelihood that the second term is positive (or not very negative) is high if the probability that the seller will have to pay cost-of-completion damages (p_m in Expression (1)) is low. Therefore, *the more productive the precaution is (i.e., the greater its cost reduction effect is) the less likely the seller is to take it*. The failure to take a highly productive action greatly increases the probability—$F(C_x)$—that $\Delta_m < C_x$. The shirking condition, represented in Expression (1), becomes easier to satisfy as $F(C_x)$ increases because then the probability that the seller will have to pay high cost-of-completion damages falls.[113] Therefore, shirking can yield a positive expected gain even when discovery is probable.

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111. The seller is legally required to pay cost-of-completion damages if they are in the neighborhood of the market delta. Thus, the seller pays the market delta only when cost of completion damages substantially exceed it. We denote as C_x the cut off cost of completion damages, below which the seller pays only the market delta. To be precise, we have:

Case (i): $\Delta_m < C_x \Rightarrow$ *seller pays* Δ_m; Pr. *Case* (i) = $F(C_x)$;

Case (ii): $\Delta_m \geq C_x \Rightarrow$ *seller pays* C_x; Pr. *Case* (ii) = $1 - F(C_x)$.

112. This is proved in supra note 102.

113. One such case is where the principal job would have been satisfactorily completed if the seller had taken the precaution but is very costly to complete ex post because the seller would have to redo work. Courts uniformly do not require the seller to

The seller also may shirk when the damage sanction (the bracketed term in Expression (1)) exceeds the contract price if breach is likely to go undiscovered. To pursue this possibility, denote the bracketed term as [•] and assume that $p_k <$ [•]; that is, the expected damages from breach, conditional on discovery, exceed the prepaid price. Expression (1), the shirking condition, then can be rewritten as:

$$(2) \qquad p_k\left(1 + \frac{1-\eta}{\eta}\right) \geq [\bullet]$$

The seller will shirk if Expression (2) is satisfied. The Expression cannot be satisfied if breach is discovered with certainty. Then $\eta = 1$ and $p_k <$ [•] by assumption. If discovery is not certain, however, Expression (2) shows that the seller's incentive to shirk is decreasing in (i) the difference between the expected damages and the contract price of the action, and (ii) the probability of discovery. Holding the probability of discovery constant, the closer the price is to expected damages—i.e., the higher the price gets—the more likely the seller is to shirk. This is because shirking permits the seller to keep the price. And holding the difference between damages and the price constant, the lower the probability of ex post discovery, the more likely it is that the seller will shirk.

We can now summarize the basic idea, which is that courts fail to recognize that parties in these contexts face a problem of imperfect contract enforcement. In the cases that courts commonly see, it is efficient to take the contractually required action assuming the precaution is taken, but it is inefficient to take the action otherwise. Courts that strive to avoid ex post wealth transfers award low damages (the market delta) in these cases. The buyer, however, cannot himself require the seller always to take the precaution because the buyer is an imperfect monitor. And the buyer may not later discover breach, either because the seller's performance of the project in its entirety is satisfactory at first blush or because the cause of an unsatisfactory performance is hard to determine. Current law thus exacerbates the parties' problem rather than relieves it: The law should impose a high sanction for breach when the buyer cannot fully help himself, but the law instead imposes a low sanction.

The theoretically efficient remedy for imperfect enforcement of a legal command or a contractual obligation is to require a malefactor who is caught to pay a penalty that equals the grossed up value of the loss she caused. Thus, a seller who shirked should have to pay $\frac{v}{\eta}$: the buyer's true value loss divided by the probability that the buyer will discover the breach. However, as we have assumed, the buyer's value is not verifiable so the court cannot observe v. A court also seldom could observe η because it is highly contextual. Whether particular breaches will be discov-

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redo work at a large cost when redoing work would yield a small market gain (i.e., $C = p_m \gg \Delta_m$). Instead, courts award the market delta Δ_m. See supra notes 45, 47 and accompanying text.

ered depends on the nature of the required performance and the nature and consequences of breach. This data varies with particular sets of parties and is not generally collected. Information constraints thus preclude implementation of the theoretically efficient penalty.

The preferred second-best solution requires the seller to pay p_m, the cost of completion, whether it exceeds the market delta or not. Then the bracketed expected damage term in Expression (1) equals p_m, which materially exceeds the price of the required action, p_k. As a consequence, sellers will perform unless the probability of ex post discovery is very low.[114] To be sure, the buyer will not spend p_m to complete when p_m exceeds his value from the service. The penalty seldom will be imposed, however, because the seller commonly will perform. Further, penalties are *intended* to create windfall gains and losses. The gains motivate injured parties to sue and the losses deter inefficient derelictions of duty. As a doctrinal matter, this analysis identifies another case in which it is efficient to award penalty damages for breach of contract.[115] We sum up this analysis by concluding: *When sellers can take cost-justified precautions to reduce the cost of performance but buyers are imperfect monitors, restricting buyers to the market delta creates an incentive for sellers not to take precautions, while awarding cost-of-completion damages creates an incentive for sellers to take them.*[116]

1. *Normative Implications.* — The conclusion that market delta damages create a perverse incentive for sellers not to take precautions implies that two famous contracts cases were incorrectly decided.[117] Thus, as

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114. Our analysis applies when the precaution deterministically reduces the cost of the relevant action to below the buyer's value, or when the precaution is efficient to take because it sufficiently increases the probability that the action is cost-justified. In both of these cases, the seller should pay a penalty when enforcement is imperfect. See supra note 106.

115. For other examples, see Aaron S. Edlin & Alan Schwartz, Optimal Penalties in Contracts, 78 Chi.-Kent L. Rev. 33, 49–52 (2003) (describing an efficient penalty mechanism); Robert E. Scott & George G. Triantis, Embedded Options and the Case Against Compensation in Contract Law, 104 Colum. L. Rev. 1428, 1481–82 (2004) [hereinafter Scott & Triantis, Embedded Options] (arguing that liquidated damages are essentially a termination fee which can increase the efficiency of a transaction).

116. Two further comments may be helpful. First, although cost of completion damages are a penalty ex post, they induce efficient behavior. Consequently, as we show infra Part IV, parties would accept them as the default. Second, when a seller has no precautions to take, cost-of-completion damages, if awarded, would function as a penalty default. The seller, by contracting out, informs the buyer that he later will be restricted to the market delta if performance turns out to be inefficient ex post.

117. In both *Jacob & Youngs* and *Peevyhouse*, the dissenters concluded that the seller's breach was willful, and thus they would have awarded cost-of-completion damages. See Jacob & Youngs, Inc. v. Kent, 129 N.E. 889, 892 (N.Y. 1921) (McLaughlin, J., dissenting) (noting that plaintiff's failure to perform "was either intentional or due to gross neglect, which, under the uncontradicted facts, amounted to the same thing"); Peevyhouse v. Garland Coal & Mining Co., 382 P.2d 109, 115 (Okla. 1963) (Irwin, J., dissenting) ("[I]n my opinion defendant's breach of the contract was willful and not in good faith."). In both cases, therefore, the majority opinions, at least implicitly, are based on the finding that the

noted above, the seller in *Jacob & Youngs* could easily have checked pipe deliveries,[118] and the mining company in *Peevyhouse* could have stripped with restoration cost in mind.[119] Restricting buyers to the market delta in the contexts these cases exemplify is inefficient.[120] This inference is sup-

seller's breach was accidental and not willful. But if the concept of willful breach is sufficiently capacious to embrace a negligent failure to take cost-effective precautions, our analysis shows that both cases were incorrectly decided. Many commentators condemn the behavior of the mining company in *Peevyhouse*, yet most commentators have assumed that the ex ante behavior of the contractor in *Jacob & Youngs* was accidental and not willful. See, e.g., Patricia Marschall, Willfulness: A Crucial Factor in Choosing Remedies for Breach of Contract, 24 Ariz. L. Rev. 733, 743, 750–51 (1982) (discussing both cases); Richard Craswell, When Is a Willful Breach 'Willful'?: A Puzzle and Two Different Economic Solutions 3 (Stan. Pub. L. Working Paper No. 1153169, 2008), available at http://www.law.stanford.edu/publications/details/4083 (on file with the *Columbia Law Review*) [hereinafter Craswell, Willful Breach] ("The builder in *Kent* used the wrong brand of pipe, apparently by accident."). But the facts in the record in both cases support the claim that the ex ante behavior of the sellers was not accidental. *Jacob & Youngs*, 129 N.E. at 892 (McLaughlin, J., dissenting) (noting that contractor failed to inspect the pipe before installing it); *Peevyhouse*, 382 P.2d at 115 (Irwin, J., dissenting) ("[T]here is nothing in the record which indicates that defendant could not perform its obligations.").

118. See supra note 108. Chakavarty and MacLeod defend the result in *Jacob & Youngs*. Chakavarty & MacLeod, supra note 64, at 30–32. In their view, the buyer had no utility loss from receiving the wrong pipe and the seller substituted other pipe (i.e., breached) because the substituted pipe was less costly. Id. Whether the buyer suffered a utility loss or not is unknown, and there is no evidence that the substituted pipe was less costly than the contract pipe. These authors also do not focus on the low cost of compliance with the contract along the way, in contrast to the high ex post cost, nor do they consider that awarding no (or nominal) damages encourages contractors not to take precautions.

119. In *Peevyhouse*, the service was actually priced; the buyers agreed to forego an additional $3,000 in royalties in return for the coal company's restoration obligation. See Maute, supra note 40, at 1347. The ex post cost was $29,000. Id. at 1395. The lease was to last for five years. Id. at 1364. At a ten percent annual interest rate, the present value, which is the value at contract time, of the cost of the ex post restoration obligation was approximately $6,300. A rational company would not accept $3,000 in return for performing a $6,300 obligation. Rather, rationality implies that it would have cost Garland Coal $3,000 or less to take the precaution by mining with restoration in mind. The Peevyhouses indicated that they valued restoration at $3,000 or more by signing the lease. Thus, taking the precaution was interim efficient. Whether the Peevyhouses valued restoration at more than $29,000 (recall that the market delta was $300, see supra note 37) is impossible to know, but we argue that awarding the cost of completion is appropriate to deter breaches such as the one in this case.

120. A recent article also argues that the buyer should receive cost-of-completion damages. See Juanda Lowder Daniel & Kevin Scott Marshall, Avoiding Economic Waste in Contract Damages: Myth, Misunderstanding, and Malcontent, 85 Neb. L. Rev. 875, 907–08 (2007) ("Under this . . . rule, an aggrieved party would receive his cost of performance where he can establish the same with the degree of certainty required by contract law jurisprudence."). We obviously agree with this article's conclusion, but the analysis these authors use is not fully persuasive. The article's formal model does not require the buyer to prepay. Id. at 901–02. Expression (1) in our model is negative (i.e., the seller never breaches) when the buyer does not prepay. See supra Part II.B. The seller's gain from breach is the price she retains less the expected value of the damage sanction. If there is no prepaid price, the seller's expected payoff from breach is just the expected value of the sanction, which is negative. Another way to put this point is that a seller who has yet to be

ported by a more systematic examination of the cases in our sample. Twenty-nine cases fit the basic assumptions of the precaution case.[121] Thirteen of them involved redoing work following a substantial perform-ance by the seller, while sixteen involved breach of the promise to restore or regrade.[122] Of these twenty-nine cases, nineteen had facts that were sufficiently clear to permit an inference that the seller could have taken cost-effective precautions to reduce the performance cost: the realized cost of completion.[123] Of the remaining eleven cases, five appeared not to offer the seller the opportunity to take actions to reduce completion costs significantly,[124] and the facts in the remaining six cases were incon-clusive. In the nineteen cases where seller actions likely would have re-duced costs, the buyer's capacity to monitor was imperfect: The buyers were mostly amateurs, and they could not constantly be on site.[125] This data suggests that the proposed penalty of cost-of-completion damages will often be efficient in cases where the seller breaches a promise to repair or restore and invokes the economic waste defense.

    2. *Renegotiation.* — It is tempting to conclude that the incentive ef-fects of cost-of-completion damages in the precaution case would unravel because parties will renegotiate in the shadow of the damage rule. To

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paid will breach only when her cost to perform exceeds the buyer's value. See the analysis in supra Part II.B. This seller cannot otherwise gain from breach. The Daniel and Marshall article also assumes that the cost of completion "approximates" the utility the buyer would have realized from performance. Daniel & Marshall, supra, at 902. Buyers value performance at or above its market value. Hence, on this assumption, the cost of completion also approximates the market delta. But when this is so, courts today award the cost of completion, so the article cannot justify a change in current practice. Third, the assumption that the ex post cost of completion approximates the ex post buyer utility from performance is unrealistic. For example, the assumption could hold in the *Peevyhouse* case only if the buyers there valued performance at 100 times its market value, and the buyer in *Jacob & Youngs* must have had a higher valuation than that. See supra notes 14–37 (discussing substantial gap between cost of completion and market delta in these cases). Courts plausibly reject the assumption that the ex post value and the ex post cost equate. Rather, the buyer's expected value will exceed the expected cost conditional on the precaution being taken. For this reason, a cost-of-completion award is a penalty when measured against the buyer's expectation but protects that expectation indirectly by inducing the seller to take precautions.

    121. See cases cited supra notes 45–47.

    122. See cases cited supra notes 45–47.

    123. E.g., Mo. Baptist Hosp. v. United States, 555 F.2d 290, 292–93 (Ct. Cl. 1977); Lowe v. Morrison, 412 So. 2d 1212, 1213 (Ala. 1982); Seago v. Fellet, 676 P.2d 1224, 1225 (Colo. App. 1983); Grossman Holdings Ltd. v. Hourihan, 414 So. 2d 1037, 1038 (Fla. 1982); Wells v. Minor, 578 N.E.2d 1337, 1339–42 (Ill. App. Ct. 1991); Asp v. O'Brien, 277 N.W.2d 382, 383–84 (Minn. 1979); Gadbois v. Leb-Co Builders, Inc., 458 A.2d 555, 556–58 (Pa. Super. Ct. 1983); Ruddach v. Don Johnston Ford, Inc., 621 P.2d 742, 743–44 (Wash. Ct. App. 1980).

    124. E.g., Bowes v. Saks & Co., 397 F.2d 113, 115–16 (7th Cir. 1968); Avery v. Fredericksen & Westbrook, 154 P.2d 41, 41–42 (Cal. Dist. Ct. App. 1944); Ideal Pool Corp. v. Hipp, 370 S.E.2d 32, 34 (Ga. Ct. App. 1988); Dimick v. Noonan, 242 S.W.2d 599, 600–02 (Mo. Ct. App. 1951).

    125. See cases cited supra note 123.

this point, we have ignored renegotiation because we are interested in the efficient damages default. We justify cost-of-completion damages in the precaution case, however, partly on the ground that they constitute an effective penalty. It is customary in the contract theory literature to consider whether renegotiation will vitiate an otherwise efficient penalty scheme.[126]

As elsewhere, renegotiation would partly undo the incentive effect of a cost-of-completion award, were renegotiation feasible, but the scheme would be effective in many cases.[127] To see why, let the buyer be legally entitled to cost-of-completion damages and assume that this cost exceeds the value, v, the buyer would realize from performance. A breaching seller can restrict the buyer to v by performing. Breach thus creates an ex post surplus of $p_m - v$: the money the seller saves less the buyer's value loss. Letting α index the buyer's bargaining power ($0 < \alpha \le 1$), the seller can buy her freedom by paying the buyer the sum q where $q = v + \alpha(p_m - v) < p_m$. Anticipating that she will have to pay q (rather than cost-of-completion damages) if she breaches and is discovered, then, using Expression (1) supra, the seller will eschew the precaution and breach if

$$(3) \qquad p_k > \eta q$$

The left hand side of Expression (3) is the prepaid contract price the seller retains, and the right hand side is the anticipated cost the seller expects to incur to avoid having to perform the service ex post if her breach is discovered.

Holding bargaining power constant, Expression (3) becomes more difficult to satisfy as the cost of completion increases. For example, if the

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126. We assumed above that renegotiation is infeasible because the buyer's value is unobservable. We now relax this information assumption to let the seller, but not the court, observe the buyer's valuation.

127. A standard contract theory result is that penalties work if an incorruptible third party enforces them. See Alan Schwartz & Joel Watson, The Law and Economics of Costly Contracting, 20 J.L. Econ. & Org. 2, 24–25 (2004) [hereinafter Schwartz & Watson, Costly Contracting] ("There is a folk theorem genre of result in the contract theory literature holding that parties now can choose the renegotiation parameter by involving a third entity."). Such parties are difficult to find, but may exist in construction contexts. There, an architect serves as a "contract referee." Under the standard AIA form contract, final payment is due upon the issuance of the architect's certificate, leaving the buyer to sustain the burden of establishing a defect that requires repair. See AIA Doc. A201, supra note 27, arts. 9.4.2, 9.6.1 (stating that Certificate for Payment is a representation by the Architect that "the quality of the Work is in accordance with the Contract Documents"). For discussion, see Robert E. Scott & George G. Triantis, Anticipating Litigation in Contract Design, 115 Yale L.J. 814, 870–71 (2006) [hereinafter Scott & Triantis, Anticipating Litigation] ("Like an arbitrator, the architect's discretion is disciplined by his reputational stake in not appearing to be biased in favor of builders or owners."). For further discussion of the function of contract referees in overcoming verifiability problems, see Robert E. Scott & Paul B. Stephan, The Limits of Leviathan: Contract Theory and the Enforcement of International Law 98–101 (2006) ("Where reciprocity breaks down in complex transactions as a result of low moral clarity, third-party arbiters . . . can serve a valuable function by 'calling fouls.'").

parties have equal bargaining power at the renegotiation stage ($\alpha = \frac{1}{2}$), and substituting for q in Expression (3), the seller will shirk if

$$(4) \qquad p_k > \eta\left(\frac{p_m + v}{2}\right).$$

Rationality implies that $p_k < v$, and in the reported cases the cost of completion, especially when work must be redone, is quite high. Expression (3) thus becomes difficult to satisfy when (a) the contract service is efficient if the precaution is taken and (b) the precaution will save substantial ex post costs.[128] The possibility of renegotiation therefore should not defeat the penalty scheme we advocate.

IV. THE CASE FOR A UNIVERSAL COST-OF-COMPLETION DEFAULT

A. *The Defects of the Market Delta Measure as a Default Rule*

The project of creating optimal default rules for contracting parties often flounders on the costs of rule creation for heterogeneous parties that function in complex environments. A good default rule is relatively predictable in its application and is suitable for a wide variety of contracting parties.[129] The criterion of predictability is a function of the rule's utility in improving the parties' contractual incentives, particularly the incentive to trade when trade is efficient and the incentive to make efficient relation-specific investments that enhance the value of the contract. The suitability criterion measures the stability of a default rule— that is, whether parties will accept the default rather than contract out of it.[130]

In Part I we showed that the "economic waste" doctrine and the market delta measure it applies combine to create a mandatory rule. The rule applies notwithstanding contract terms that expressly obligate the seller to bear the full cost of repair or restoration. Moreover, the penalty doctrine constrains contracts that purport to protect difficult to verify values whenever the ex post market price of a contract service greatly exceeds the market delta.[131] But regardless of this constraint, the market delta measure also fails both the predictability and stability criteria for a good default rule.

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128. See cases cited supra note 123. For a numerical example, let $p_k = 1.5$ and v, the buyer's realized value, be 1.8. In the cases, the cost of completion can be hundreds of times greater than the cost of taking the precaution, which is p_k (recall the discussion of *Jacob & Youngs v. Kent*, supra note 14). At a conservative estimate, let the cost of completion be ten times the precaution cost. Then, using Expression (4), though there is renegotiation, the seller will not shirk if the probability of discovery exceeds 19%.

129. See Schwartz & Scott, Contract Theory, supra note 91, at 598–601, for derivation of the criteria for good default rules.

130. See id. at 598–99.

131. See Goetz & Scott, Liquidated Damages, supra note 61, at 578–83 ("The current penalty rule seems to produce significant inefficient effects by limiting the possibilities of mutually beneficial exchange."); see also supra text accompanying notes 60–63.

The market delta rule lacks predictability because it is a vague standard that is not grounded in particular parties' circumstances. In the economic waste case, a buyer is restricted to diminished value when cost-of-completion damages would greatly exceed the market delta. The extensive case law following *Jacob & Youngs, Inc. v. Kent* further qualifies the economic waste doctrine by requiring that a seller's default be in "good faith."[132] If her breach is willful or in bad faith, the buyer presumably can recover cost-of-completion damages. The instructions to the parties and courts that cost-of-completion damages cannot be "too high" or that parties must behave in good faith and not "willfully" are acontextual and vague: They are not given content either by contract terms or by legal rules that reflect the specific contexts in which parties function. Free-floating standards such as these give parties and courts little guidance. As a result, these standards fail to motivate sellers to take efficient precautions against ex post cost increases,[133] and they encourage strategic breaches whose object is to extort more favorable terms than a party could obtain in the initial contract.[134] By way of contrast, franchise contracts commonly set out a precise list of the franchisee's duties and conclude with a broad standard that requires the franchisee to use "best efforts" to make the venture succeed. The broad concluding duty is thus given content by the preceding, specific injunctions.[135]

To be sure, parties to complex transactions sometimes use vague standards such as "best efforts" with no internal limitations, but the fact that they frequently do not suggests that courts are wise to avoid reading into commercial contracts implied standards, such as reasonableness or good faith: Commercial parties understand the nature of their relationship better than courts do and are better able to determine when the inclusion of a broad standard in the contract will optimize the mix of precise and vague terms.[136] For this reason, parties contract out of free-

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132. See, e.g., Shell v. Schmidt, 330 P.2d 817, 823 (Cal. Dist. Ct. App. 1958) (noting that "good faith" or "lack of willfulness" must be proven in order to utilize substantial performance rule and "value" measure of damages); Groves v. John Wunder Co., 286 N.W. 235, 236 (Minn. 1939) (same); Jacob & Youngs, Inc. v. Kent, 129 N.E. 889, 891 (N.Y. 1921) ("The willful transgressor must accept the penalty of his transgression. For him there is no occasion to mitigate the rigor of implied conditions." (citation omitted)). The conditions that trigger a willful breach are uncertain because the concept itself is ambiguous. See Craswell, Willful Breach, supra note 117, at 1 ("The word most commonly used is 'wilful' [sic]; and it is seldom accompanied by any discussion of its meaning. . . . Its use indicates a childlike faith in the existence of a plain and obvious line between the good and the bad, between unfortunate virtue and unforgivable sin." (quoting Corbin, 5 Corbin on Contracts, supra note 71, at 545)).

133. See supra text accompanying notes 111–117.

134. See Schwartz & Scott, Contract Theory, supra note 91, at 601–05 (arguing that free-floating standards create moral hazard).

135. See Scott & Triantis, Anticipating Litigation, supra note 127, at 853–55 (noting that franchise and distributorship contracts "typically provide that the agent both satisfy specific requirements and generally exercise best efforts").

136. Id. at 844, 878–79.

floating legal standards when they can.[137] The market delta rule thus would be an unstable default.

Moreover, in Part III we showed that when cost-of-completion damages substantially exceed the market delta, nontrading buyers are restricted to market delta damages, which are less than the prepaid contract price that the breaching seller retains. This restriction causes many buyers to face negative expected profits from even an ex ante efficient contract, and so discourages buyers from making these contracts. Both sides benefit, however, when buyers whose expected values exceed seller costs enter the market. Finally, the market delta rule creates an insufficient incentive for sellers to take precautions that would efficiently reduce the likelihood of later breach. In sum, parties would opt out of the market delta default were they free to do so.

B. *Market Damages and the Cost of Completion Are Good Defaults*

The argument for abandoning the economic waste doctrine ultimately depends on the claim that market damages (and the full cost of completion when the buyer prepays) would be a better default in all cases, including those where completion costs probably exceed the value of completion to the buyer. At the outset, it is important to emphasize that courts cannot award market damages unless there is a market on which good substitutes can be purchased. Assuming that there is a market for the contract services ex post, a market damages default satisfies the predictability criterion: It is a rule that awards the buyer the difference between the contract and market prices, both of which parties and courts commonly can recover. This default also satisfies the stability criterion: Parties will generally accept it. To understand why, first assume that buyers do not prepay for the contract service. Assume further that the default rule entitles buyers to cost-of-completion damages less the unpaid contract price—in other words, to market damages.[138] Part II showed that market damages maximize the probability that parties will contract efficiently and also ensure that the parties trade if and only if trade is efficient. As a consequence, market damages maximize a transaction's expected surplus. We have assumed a competitive market, in which buyers realize the full surplus from contracting. Since market damages maximize that surplus, buyers at the time of contracting prefer (i.e., they will not contract out of) the market damages rule. Sellers earn zero profits in any competitive equilibrium, so they too have no incentive to alter a market damages default.

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137. Schwartz & Scott, Contract Theory, supra note 91, at 601–05.

138. This is effectively the rule courts apply where there is no evidence of "economic waste" and the buyer has not prepaid for the contract service. In such a case, the general rule is that the buyer is entitled to cost-of-completion damages less the contract price remaining unpaid or, in effect, market damages. See supra text accompanying notes 41–44.

A market damages default must then add restitution of the price when the buyer prepays. A buyer will contract ex ante for the service if he expects to earn a positive return. In Part III, we showed that when the seller can retain the price, many buyers expect to earn negative returns. This is because the seller retains the contract price even though it exceeds the damages award. As a consequence, buyers who would willingly pay above cost for the service will not make ex ante contracts. Sellers also earn negative returns when there are too few buyers. Thus, sellers are motivated to return the price on breach, to the extent that transaction costs permit the price to be reliably reconstructed. Since a cost-of-completion default automatically ensures return of the price, it satisfies both sides of the market: Buyers earn positive expected profits and sellers earn a competitive return on investment.

To summarize, the argument for the cost of completion as a stable default rule proceeds as follows: (a) Market damages maximize expected surplus, so a rule awarding them is a good default for contracting parties whenever there is an available market; (b) When the buyer prepays, it is efficient and fair to permit buyers to have restitution of the contract price;[139] and (c) When the seller can take a precaution that reduces expected costs and buyers monitor imperfectly, overcompensatory damages are needed to ensure that the precaution actually is taken. Moreover, since cost-of-completion damages are a formula rather than a number, a default that requires the seller to pay them would be stable and thus may avoid the ban on overcompensatory liquidated damage clauses.[140] Together, these three steps imply that typical parties would accept a default that is the sum of market damages and restitution.

Four arguments are commonly advanced against cost-of-completion damages in economic waste cases. First, courts sometimes argue that the deviation from compensation will be much greater if cost-of-completion damages are awarded than if the buyer is limited to the market delta. This argument assumes that courts are able to verify the buyer's valuation and will award the market delta only in those cases where the buyer's subjective value is substantially lower than the ex post market price. This

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139. With regard to fairness, it is not inequitable to require the seller to pay cost-of-completion damages though they significantly exceed the market delta. A significant component of these damages is restitution, and it is not inequitable to require the seller to return the money when she did not do the work.

140. The penalty cost-of-completion default would assign the risk of endogenous cost increases in much the same way that the common law, beginning 350 years ago, assigned it in Paradine v. Jane, (1647) 82 Eng. Rep. 897, 897 (K.B.) ("[W]hen the party by his own contract creates a duty or charge upon himself, he is bound to make it good, if he may, notwithstanding any accident by inevitable necessity, because he might have provided against it by his contract."). This principle is part of the common law of contracts in all American jurisdictions. See, e.g., Stees v. Leonard, 20 Minn. 494, 503 (1874) ("If a man bind himself . . . to do an act in itself possible, he must perform his engagement, unless prevented by the act of God, the law, or the other party to the contract."). See generally Scott & Kraus, Contract Law, supra note 3, at 76–88.

assumption is often incorrect, especially when the buyer's value is subjective or is the foregone gain from a new venture.[141] Indeed, the common law's strong preference for market damages evinces a recognition of the problems of proof created by efforts to measure cost and value directly.[142] Moreover, the market delta is not a viable proxy for the value of performance to the buyer. Ordinarily, courts can infer from a party's failure to contract away from a damages default that the default is an accurate proxy for the loss in value caused by breach. But as we showed in Part I.C, the market delta measure is effectively a mandatory rule. Thus, that buyers fail to specify a larger valuation in the ex ante contract cannot support an inference that the buyers prefer the market delta damage measure.

The second argument offered against awarding cost-of-completion damages in the economic waste case is a concern that the prospect of a large damage liability will cause the seller to invest excessively in precautions. This is not a problem under the usual assumptions of contract theory. These assumptions hold that (a) payoff relevant information is either verifiable or it is not; and (b) parties will contract only on verifiable information. Our model in Part III assumed that the seller may be unable to verify that she took the precaution but she can verify that she took the contractually required action. For example, if the seller contracted to regrade the land, then the seller can verify to a court that she regraded the land. Since the seller will agree to regrade only if the expected cost is less than the price, the seller has no incentive to invest excessively in precautions.

But suppose the assumption of verifiability is relaxed in favor of assuming that courts are accurate on average but can make mistakes. Would a cost-of-completion award cause excessive precautions when mistakes may be serious? In the apparently few contexts when this can occur, parties will contract out of the cost-of-completion default. As an illustration, a buyer may behave strategically in connection with a complex construction contract, which requires the seller to comply with a precise and detailed list of specifications. In that setting, minor deviations from the specifications might be exploited by a buyer intent on capturing a penal sum. This problem is solved in the common construction case by the use of the architect as a contract referee. The standard AIA construction contract provides for the architect to issue his certificate of final payment when he finds that the work is "acceptable under the Contract

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141. See Ruxley Elecs. & Constr. Ltd. v. Forsyth, (1995) 3 All E.R. 268, 277 (H.L.) (holding that court should measure promisee's subjective value directly); cf. Eisenberg, supra note 25, at 595 (arguing that courts should use as a proxy for buyer's subjective value whether "promisor has made a convincing case that the promisee would be highly unlikely to use . . . cost of completion to actually remediate the defective performance").

142. Scott, Market Damages, supra note 11, at 1160–65.

Documents."[143] In turn, the architect's discretion is constrained. He has a strong incentive to preserve his reputation for treating both builders and owners even-handedly.[144] Moreover, a seller for whom such safeguards are insufficient can elect to opt out of the cost-of-completion default and contract for the market delta measure.

A third argument against cost-of-completion damages follows from the assumption that the large bargaining range between the market delta and a cost-of-completion award will cause excessive transaction costs when parties renegotiate following the seller's breach. This argument assumes, however, that nothing is gained by awarding buyers the cost of completion; on this assumption, any law-induced bargaining cost is a social waste. To the contrary, we show that awarding buyers the cost of completion creates incentives for sellers to take efficient interim precautions. The transaction costs of renegotiation do not vitiate this incentive scheme, and so are less than its social gain.

In addition, the transaction cost argument must also assume that courts are able to verify the buyer's true value or that the market delta is a good proxy for that value. Otherwise, there is no a priori reason to believe that a divergence between the market delta and market damages in any given case will generate excessive bargaining costs. Market damages place fewer information demands on courts than the market delta remedy. A court need not separately identify the price when the buyer prepays because the price is a part of the cost of completion (the ex post market price). In addition, whenever there is an available market on which to purchase a substitute performance, it is generally easier to identify the ex post market price for the contract service than to reconstruct the requisite counterfactual—the value the buyer's property would have had if the seller had performed the service. Thus, awarding the cost of completion is a good default not only because parties prefer it, but also because courts can conveniently apply it.

The ease with which courts can recover the relevant market price points to a final argument against cost-of-completion damages: The market for substitutes is heterogeneous and consists of separate markets for replacement and resale. Thus, when courts limit the buyer to the market delta they are selecting the resale market as the low cost market in which to measure market damages. On this view, the market delta is not a limitation on market damages but rather reflects the courts' judgment as to the best market in which to measure the buyer's loss.[145] This argument suffers from a flawed assumption, however. When the buyer enters the market for restoration or repair services ex ante, the price he prepays is

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143. See AIA Doc. A201, supra note 27, art. 9.10.1 (stating that "Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled").

144. Scott & Triantis, Anticipating Litigation, supra note 127, at 871.

145. We thank Eric Talley for suggesting this argument.

the ex ante replacement market price. When a court awards market delta damages, however, it measures the buyer's damages by the resale market—a different market than the one in which the buyer contracted. It is this erroneous apples and oranges comparison that underlies the buyer's legitimate claim for restitution and the consequent inefficiencies of the market delta rule.

CONCLUSION

When parties trade in thick markets, market damages—the difference between the market price for goods or services at the time of breach and the contract price—is the best damage default. Market damages protect the expectation interest, and protecting the expectation interest uniquely maximizes the probability that parties will contract efficiently. To be sure, other damage measures protect the expectation interest as well, but market damages also do not create investment inefficiencies, and sometimes help to ameliorate them. Finally, market damages do not impede the parties' incentive to trade if and only if trade is efficient.

Courts commonly overlook the virtues of market damages when promisors offer a set of services which are not separately priced. For example, the promisor may agree to pay royalties on a mining lease and later to restore the promisee's property. In these cases, courts compare the cost to the promisor of providing the service that was not supplied to the increase in the market value of the promisee/buyer's property had the promisor/seller performed. When the cost of completion is large relative to the "market delta"—the increase in market value—courts award the value increase. This comparison is mistaken. The cost of completion comprises the ex ante market price for the service plus the difference between the ex post price and the ex ante price. Since the buyer commonly prepays for the service at the ex ante market price, a cost-of-completion award actually has a restitution element—the prepaid price—and an expectation interest element—the market damages. The failure to recognize the joint nature of cost-of-completion damages causes courts to deny these damages more frequently than they should. If it is justifiable for courts to deny buyers "excessive" damages, courts thus should compare the market delta to market damages, not to the cost of completion.

We have argued, however, that courts should award market damages even when they substantially exceed the market delta. To deny buyers market damages in these cases functions as a subsidy to sellers because it permits them to be fully compensated when they prefer performance, but to pay less than full damages when they prefer breach. As a consequence, sellers expect to earn positive profits. The market delta rule also acts as a tax on buyers, but, as we show, the subsidy effect dominates the tax effect, so that the market delta rule induces excessive entry into these service markets. More significantly, since the rule itself has no efficiency properties, it distorts the decisions of both sides of the market regarding when to make otherwise efficient contracts.

These distortions are magnified when buyers prepay for part of a bundled service but cannot recover back the price or full market damages. As a result, even more excess sellers are encouraged to enter the market and more buyers will drop out. Finally, sellers often can take actions in the interim between making the contract and the time for performance of the service that would reduce the service cost to manageable proportions. Sellers are less likely to take these precautions when upon breach they must pay buyers only the market delta rather than the full performance cost that their actions could have avoided.

We conclude with two further remarks. First, a market damages default solves one information problem perfectly but solves the other imperfectly. On the one hand, awarding buyers the cost of completion frees courts from reconstructing the ex ante shadow price for the breached contract service. On the other hand, we assumed above that there was a unique cost of completion—the ex post market price—that parties and courts could easily recover. This assumption is strong when applied to many service markets where there is considerable supply, and therefore price, heterogeneity. Our proposals do not worsen this problem, however. Under the current rule, courts must ascertain the cost of completion in order to decide whether to award those damages or the market delta. Nevertheless, if the virtues of market damages come to be more widely recognized, there will likely be greater focus on determining the relevant market for contract services and the current price of those services within that market. The issues surrounding market definition engender substantial scholarly commentary in the antitrust field but have been virtually ignored in contracting contexts. Further research could usefully end this neglect.

Second, courts that award the market delta are practicing a form of soft paternalism. Judges believe that, notwithstanding the express terms of the contract, the parties must have made a mistake. No one intends at the contracting stage to require a miner/seller later to spend $29,000 to restore property whose market value would increase by less than $500.[146] The judicial tendency to attribute a lack of foresight or incompetence to parties in commercial contexts, and thus to override explicit contracts with mandatory rules, is regrettably widespread.[147] This tendency is responsible for overly restrictive liquidated damage rules,[148] for ignoring

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146. These were the facts in Peevyhouse v. Garland Coal & Mining Co., 382 P.2d 109 (Okla. 1962).

147. See Schwartz & Scott, Contract Theory, supra note 91, at 609–11 (noting that courts often attempt to supply the agreement that "ideal deliberative conditions . . . would have produced").

148. See Goetz & Scott, Liquidated Damages, supra note 61, at 556 (arguing that current doctrine regarding liquidated damages "induces a costly reexamination of the initial allocation of risks"); Alan Schwartz, The Myth that Promisees Prefer Supracompensatory Remedies: An Analysis of Contracting for Damage Measures, 100 Yale L.J. 369, 371 (1990) (showing that courts sometimes mistake compensatory liquidated damage clauses for penalties); Scott & Triantis, Embedded Options, supra note 115, at

merger clauses and instead forcing costly trials on interpretation issues,[149] for preventing efficient contractual restrictions on the parties' ability to renegotiate,[150] and for much else.[151] We show here, and it has been shown elsewhere, that such judicial interventions produce inefficiency but yield no offsetting benefits. Perhaps it is time for a "judicial default." When a contracting practice is widespread, such as the bundled prepayment for services discussed here, courts should assume that the practice is efficient. This presumption may be plausibly overcome by serious scholarly commentary or experience but not by the fairness pleas of disappointed parties.

1481–82 (observing that "penalty doctrine [is] a major impediment to efficient contracting").

149. See Goetz & Scott, Expanded Choice, supra note 59, at 313–17 (arguing that courts often have difficulty interpreting contracts that combine express and implied terms); Schwartz & Scott, Contract Theory, supra note 91, at 568–94 (arguing that parties want courts to decide issues on a "narrow evidentiary base whose most significant component is the written contract").

150. See generally Schwartz & Watson, Costly Contracting, supra note 127 (suggesting that courts' rejection of formalism increases costs of contracting).

151. See generally Victor Goldberg, Framing Contract Law: An Economic Perspective 101–41 (2006) (discussing unfortunate tendency of courts to imply standards of good faith in long term open quantity contracts); Jody S. Kraus & Robert E. Scott, Contract Design and the Structure of Contractual Intent (Am. Law and Econ. Ass'n 18th Annual Meeting, Working Paper No. 141, 2008) available at http://law/bepress.com/alea/18th/art141/ (on file with the *Columbia Law Review*).