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# Measuring Sellers' Damages: The Lost-Profits Puzzle†

Charles J. Goetz\*  
Robert E. Scott\*\*

A buyer repudiates a fixed-price contract to purchase goods, and the seller sues for damages. How should a court measure the seller's loss? The answer seems simple: The seller should be awarded damages sufficient to place it in the same economic position it would have enjoyed had the buyer performed the contract.<sup>1</sup> But the seductive conceptual simplicity of the compensation principle disguises substantial practical problems in measuring seller's damages.

Contract law has traditionally minimized measurement difficulties by basing damages in most cases on the difference between the contract price and market value of the repudiated goods.<sup>2</sup> The com-

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1. For a discussion of the efficiency of the compensation principle in contract damages, see Goetz & 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, 554-77 (1977).

2. See *United States v. Burton Coal Co.*, 273 U.S. 337 (1927); *Garfield & Proctor Coal Co. v. New York, N.H. & H.R.R.*, 248 Mass. 502, 143 N.E. 312 (1924); UNIFORM SALES ACT § 64(3); 5 A. CORBIN, CONTRACTS §§ 1100-1101 (1950); C. MCCORMICK, HANDBOOK ON THE LAW OF DAMAGES § 173, at 658-60 (1935). The traditional benchmark for identifying market values was the market price of the goods at the time of delivery. Although the seller's resale price was relevant evidence in establishing market value, most common law courts did not regard it as conclusive. See, e.g., *Farish Co. v. Madison Distrib. Co.*, 37 F.2d 455, 457-58 (2d Cir. 1930). One of the significant innovations of the U.C.C. damages scheme is found in § 2-706, which allows the seller to fix market value by making a regulated resale and recovering the contract price-resale price differential. The seller, however, remains free to establish market damages through the more traditional mechanism of § 2-708(1): the difference between the contract price and the market price at the time and place of delivery. U.C.C. §§ 2-706, -708(1).

The simplicity of the contract price-market value damage formula belies its accuracy.

mon law courts generally limited the seller to such market damages whenever the seller had a resale market for the contract goods.<sup>3</sup> These courts assumed that combining this damage award with proceeds from a resale would give the seller the profits that performance would have earned it.

But the contract-market formula is not the universal damage rule. Such a price differential formula assumes a market in which the seller has a realistic opportunity to replace the buyer's contract. Where resale on the market is not feasible, the seller can only recover its lost profits through alternative recovery rules.<sup>4</sup> Most common law courts admitted an exception only for the seller of special order goods who reasonably salvaged an incomplete performance: Such a seller could establish lost profits by directly proving any changes in revenue and cost produced by the breach.<sup>5</sup> But as the Uniform Commer-

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Measuring damages with this mechanism properly reimburses the seller for losses from a declining market because the contract allocated the risk of a declining market to the buyer. It also efficiently implements the compensation principle by implicitly providing the seller with its contractual expectation.

3. See *Olcese v. Davis*, 124 Cal. App. 2d 58, 61-63, 268 P.2d 175, 177-78 (1st Dist. 1954); *Masterton v. Mayor of Brooklyn*, 7 Hill 61 (N.Y. Sup. Ct. 1844); 5 A. CORBIN, *supra* note 2, §§ 1039, 1100-1101; C. MCCORMICK, *supra* note 2, § 173, at 658-60; 2 S. WILLISTON, *THE LAW GOVERNING THE SALES OF GOODS AT COMMON LAW* § 582 (2d ed. 1924).

The remedial provisions of the Uniform Sales Act incorporate the "available market" rule: "Where there is an available market for the goods in question, the measure of damages is, in the absence of special circumstances showing proximate damage of a greater amount, the difference between the contract price and the market or current price at the time or times when the goods ought to have been accepted, or, if no time was fixed for acceptance, then at the time of the refusal to accept." UNIFORM SALES ACT § 64(3).

4. If the contract goods are on hand at the time of breach and the lack of a market makes resale at a reasonable price implausible, the seller has traditionally been able to enforce the contract by recovering the full purchase price. See U.C.C. § 2-709(1)(b); UNIFORM SALES ACT § 63(3). Specialized remedies were also available at common law if no market existed. C. MCCORMICK, *supra* note 2, § 173, at 661-62.

5. The common sense of this rule is self-evident. This category of sellers cannot replace the breached contract since, by definition, no replacement market exists.

Uniform Sales Act § 64(4), the predecessor of U.C.C. § 2-704(2), was less explicit in granting the seller of specialized goods the choice of salvaging and recovering lost profits. By negative implication, § 64(4) applied only when there was no "available market" for the application of market damages under § 64(3). The section provided: "[T]he buyer shall be liable to the seller for no greater damages than the seller would have suffered if he did nothing towards carrying out the contract or the sale after receiving notice of the buyer's repudiation or countermand. *The profit the seller would have made if the contract or the sale had been fully performed shall be considered in estimating such damages.*" (emphasis added). Although § 64(4) only provided that the seller's prospective profit would be "considered," the majority of common law courts held that damages should equal the seller's lost profit when the buyer repudiated before completion of the special order contract. See, e.g., *United States v. Purcell Envelope Co.*, 249 U.S. 313, 320 (1919); *Miami Cycle & Mfg. Co. v. National Carbon Co.*, 268 F. 46, 53-54 (6th Cir. 1920). These courts computed estimated profits by subtracting estimated cost of manufacture or procurement from the contract price. See *Snelling v. Dine*, 270 Mass. 501,

cial Code damages scheme supplanted the common law,<sup>6</sup> the notion was advanced that the common law rule erroneously used the contract-market formula to measure loss in several circumstances in which the compensation principle demanded that the seller recover by direct proof the profit lost because of the breach.<sup>7</sup>

Two categories of sellers are typically invoked to illustrate the failure of market damages to mirror true losses despite an available market for contract goods. The first—known popularly as the “components seller”<sup>8</sup>—includes those cases in which the seller has not fully

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504-08, 170 N.E. 403, 404-06 (1930); *Gelusha v. Scharoun*, 87 N.Y.S.2d 381, 382-83 (Sup. Ct. 1949).

6. U.C.C. §§ 2-703 to -718. The U.C.C. reflects the traditional market-damage measures in its treatment of seller's damages. Initially, the Code directs the aggrieved seller to two equally available market alternatives: (1) It can promptly resell on the market, using the contract price-resale price formula in § 2-706; or (2) it can rely on hypothetical market opportunities by proving the contract price-market price differential under § 2-708(1). This choice depends on whether the expected litigation costs of proving market price are greater than the administrative costs of a supervised resale. As long as the calculation is *ex ante*, all other things being equal, either alternative will produce the same market damages and will permit sellers to recover implicit profits. The U.C.C. authorizes the direct recovery of lost profits only when neither market alternative places the seller in a full performance position. U.C.C. § 2-708(2).

Several commentators have criticized the market price-contract price alternative to the resale formula, arguing that if the seller resells the contract goods, the market formula will equal true losses only by chance. See J. WHITE & R. SUMMERS, *HANDBOOK OF THE LAW UNDER THE UNIFORM COMMERCIAL CODE* § 7-7, at 221 (1972); Peters, *Remedies for Breach of Contracts Relating to the Sale of Goods Under the Uniform Commercial Code: A Roadmap for Article Two*, 73 *YALE L.J.* 199, 258-59 (1963). For example, if contract price is \$10, the goods are resold after breach for \$6, and market value at time of delivery is \$7, awarding damages under § 2-708(1) seems to undercompensate the seller. But only when we view the case *after the fact* does a market damages formula appear to under- or overcompensate the seller. If the choice of remedies is viewed *ex ante*, the seller has no reason to prefer one alternative over the other since it presumably cannot predict the market. Thus, the seller will choose the alternative that minimizes expected breach costs. See Jackson, “*Anticipatory Repudiation*” and the Temporal Element of Contract Law: An Economic Inquiry into Contract Damages in Cases of Prospective Non-Performance, 31 *STAN. L. REV.* 69, 112-16 (1978).

7. See generally R. NORDSTROM, *HANDBOOK ON THE LAW OF SALES* § 177 (1970); J. WHITE & R. SUMMERS, *supra* note 6, §§ 7-8 to -13; Childres & Burgess, *Seller's Remedies: The Primacy of UCC 2-708(2)*, 48 *N.Y.U. L. REV.* 833 (1973); Harris, *A General Theory for Measuring Seller's Damages for Total Breach of Contract*, 60 *MICH. L. REV.* 577 (1962) [hereinafter cited as Harris, *General Theory*]; Harris, *A Radical Restatement of the Law of Seller's Damages: Sales Act and Commercial Code Results Compared*, 18 *STAN. L. REV.* 66 (1965) [hereinafter cited as Harris, *Radical Restatement*]; Peters, *supra* note 6, at 273-75; Schlosser, *Construing UCC Section 2-708(2) to Apply to the Lost-Volume Seller*, 24 *CASE W. RES. L. REV.* 686 (1973); Speidel & Clay, *Seller's Recovery of Overhead Under UCC Section 2-708(2): Economic Cost Theory and Contract Remedial Policy*, 57 *CORNELL L. REV.* 681 (1972).

8. Professor Harris is the source of this nomenclature. See Harris, *Radical Restatement*, *supra* note 7, at 97-98. The “components” label includes all manufacturers who reasonably elect not to complete the production process as well as jobbers or distributors who reasonably determine not to acquire the contract goods. See J. WHITE & R. SUMMERS, *supra* note 6, § 7-10.

manufactured or procured the contract goods at the time of the breach. Assume, for example, a contract price of \$100 and a breach after a significant decline in the market to \$50 at the time for performance. The seller chooses not to complete its contractual preparations, which would have cost \$80.<sup>9</sup> The buyer contends that market damages of \$50 do not properly measure true losses. Since the contract-market formula bears no rational relationship to the seller's contemplated or actual investment in the contract, it necessarily distorts the seller's damages. Thus, it is argued, damages can only be measured accurately by the seller's anticipated profits as revealed by the \$20 difference between the contract price and the estimated costs of production.<sup>10</sup>

The "lost-volume seller"<sup>11</sup> is the second category where market damages are frequently believed to measure true losses inadequately. Market resales do not replace or substitute for the breached contract when such resales would have been made even if the buyer had not breached. The seller may contend that, while it did in fact resell the contract goods, the other buyer would have purchased anyway. Therefore, if the breaching buyer had fully performed the contract, the seller would have realized two profits from two sales. Since selling the goods to the second buyer produced only one profit for the seller, the breaching party ought to pay over the other profit in order to put the seller in the position it would have achieved had the buyer

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9. U.C.C. § 2-704(2) provides: "Where the goods are unfinished an aggrieved seller may in the exercise of reasonable commercial judgment for the purposes of avoiding loss and of effective realization either complete the manufacture and wholly identify the goods to the contract or cease manufacture and resell for scrap or salvage value or proceed in any other reasonable manner." (emphasis added).

10. Several commentators have advanced the argument that a "components" sale necessarily excludes a market formula as an accurate measure of the loss. See, e.g., R. NORDSTROM, *supra* note 7, § 177; J. WHITE & R. SUMMERS, *supra* note 6, § 7-10, at 227; Peters, *supra* note 6, at 273.

Although he distinguished resale (retail) and acquisition (wholesale) prices (a problem of incidental damage under U.C.C. § 2-710), Professor Harris recognized that a components sale does not necessarily impair the use of market damages: "If breach had occurred before acquisition and plaintiff would have acquired the entity in the same market in which he would have resold it, acquisition value and resale value are identical if both values are measured on the same date and no transportation costs need be considered. This coincidence of acquisition and resale values enables courts to reach sound results while ignoring the difficult question of whether the goods were on hand or yet to be acquired." Harris, *Radical Restatement*, *supra* note 7, at 77 n.62.

In Part II, we examine the arguments challenging the accuracy of market damages when the seller terminates an incomplete performance. See notes 77-82 *infra* and accompanying text.

11. Professor Harris is also responsible for this terminology. See Harris, *General Theory*, *supra* note 7, at 599-605.

performed. Conventional analysis has assumed that whenever the seller is able to supply all available buyers at the prevailing price, its damages are presumptively equal to the entire expected profit lost on the breached contract.

The Uniform Commercial Code's rules for measuring sellers' damages reflect these concerns about the inaccuracy of the contract-market formula. Although the Code retains the general preference for market damages,<sup>12</sup> its draftsmen abandoned the narrow access to lost profits for sellers of special order goods in favor of a more general rule awarding lost profits whenever market damages are inadequate "to put the seller in as good a position as performance would have done."<sup>13</sup> Eliminating the "available market" criterion enhanced the

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12. See note 6 *supra*. The contract-resale formula of U.C.C. § 2-706(1) was not generally available to the seller at common law. Section 60 of the Uniform Sales Act authorized a resale formula only in limited circumstances. Although resale price was relevant evidence of the market value at the time of delivery, the seller frequently could not use resale price to reduce the expected litigation costs of proving market value. The resale formula is a useful alternative remedy when proof of market value is costly because it permits the seller to fix its damages with greater certainty.

The alternative market formula of U.C.C. § 2-708(1), authorizing recovery of the "difference between the market price . . . and the unpaid contract price," is the progeny of the common law market formula and § 64(3) of the Uniform Sales Act. It completes the Code's market-damages scheme.

13. U.C.C. § 2-708(2) states that: "If the measure of damages provided in subsection (1) is inadequate to put the seller in as good a position as performance would have done then the measure of damages is the profit (including reasonable overhead) which the seller would have made from full performance by the buyer, together with any incidental damages provided in this Article (Section 2-710), due allowance for costs reasonably incurred and due credit for payments or proceeds of resale."

The initial revision of § 64 of the Uniform Sales Act eliminated the "available market" standard, which had limited the use of the lost-profits measure. The section provided: "*Damages for non-acceptance.* The measure of damages for non-acceptance is the difference between the unpaid contract price and the price current at the time and place for tender together with any incidental damages under Section 112 but less any expense saved in consequence of the buyer's breach, *except that if the foregoing measure of damages is inadequate to put the seller in as good a position as performance would have done then the measure of damages is the profit the seller would have made from full performance by the buyer.*" UNIFORM SALES ACT § 110 (Prop. Final Draft No. 1, 1944) (emphasis added). Although the draft did not include commentary to explain the change, a clearer indication of the draftsmen's concerns with the common law rule appeared when the Uniform Revised Sales Act was incorporated into the 1949 draft of article 2 of the U.C.C. The revised section became § 2-708 of the U.C.C., and the Code drafters provided the following comment: "The provision of this section permitting recovery of expected profits where the standard measure of damages is inadequate, together with a new requirement that price actions may be sustained only where resale is impractical, are designed to *eliminate the unfair and economically wasteful results arising under the older law when fixed price articles were involved. This section permits the recovery of lost profits in all appropriate cases, which would include all standard priced goods.*" U.C.C. § 2-708, Comment 2 (1944 draft version) (emphasis added).

Using a market formula for breaches involving standard-priced goods often produced only nominal damages. It was this apparent anomaly that supported a wider access to lost-

opportunities for sellers to assert lost-volume claims.<sup>14</sup> Moreover, because the new rule did not identify the circumstances in which compensating a salvaging seller requires an award of lost profits, it allowed lost-profit claims even when a market for salvage goods existed.<sup>15</sup> The resulting increase in lost-profits claims through the un-

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profits damages. *See* 1 N.Y. LAW REVISION COMM'N ANN. REP. 694-95 (1955). But the Code draftsmen failed to indicate in the statutory language the circumstances in which lost-profits awards were appropriate. Instead, as § 2-708 went through subsequent revisions (including the division into two subsections), the indiscriminating filter into lost profits remained, as did the commentary describing it.

14. Under the common law rule, as reflected in Uniform Sales Act § 64(3), courts contemplating a lost-profits award had to maneuver around the "available-market" limitation. *See* note 21 *infra*. The U.C.C., by eliminating this difficulty, allowed courts to recognize claims on the basis of little evidence. *See, e.g.*, Famous Knitwear Corp. v. Drug Fair, Inc., 493 F.2d 251, 253-55 (4th Cir. 1974); Distribu-Dor, Inc. v. Karadanis, 11 Cal. App. 3d 463, 469-71, 90 Cal. Rptr. 231, 234-36 (3d Dist. 1970); Snyder v. Herbert Greenbaum & Assocs., 38 Md. App. 144, 380 A.2d 618 (Ct. Spec. App. 1977); Neri v. Retail Marine Corp., 30 N.Y.2d 393, 285 N.E.2d 311, 334 N.Y.S.2d 165 (1972).

15. Expanding lost-profit access under the U.C.C. to accommodate the standard-priced seller diverted attention away from those sellers who recovered lost profits at common law. The inartful draftsmanship of the relevant Uniform Sales Act provision, § 64(4), was in part responsible. This predecessor to U.C.C. § 2-704(2) was supposed to resolve the damage issues when the buyer repudiated before the seller completed performance. Although section 64(4) implicitly authorized lost profits for sellers of special-order goods without an available resale market who elected to salvage their pre-breach preparations, it was principally intended to encourage sellers to salvage when completing production of the contracted goods would increase the buyer's damages. *See, e.g.*, Hinckley v. Pittsburgh Bessemer Steel Co., 121 U.S. 264, 274-76 (1887) (repudiation of contract to roll steel pursuant to pattern furnished by the buyer); Lieberman v. Templar Motor Co., 236 N.Y. 139, 148-49, 140 N.E. 222, 224-25 (1923) (repudiation of contract to purchase automobile bodies built by seller from special design); Todd v. Gamble, 148 N.Y. 382, 384, 42 N.E. 982, 984 (1896) (repudiation of contract to supply highly perishable chemical for which no immediate resale market existed).

The common law cases generally adhered to the specialized-goods criterion. If the goods were products with a ready market, the seller was limited to the market-contract differential. *W.R. Grace & Co. v. Nagle*, 275 F. 343, 346 (2d Cir. 1921) (steel); *Kincaid v. Price*, 18 Colo. App. 73, 70 P. 153 (1902) (coal); *Garfield & Proctor Coal Co. v. New York, N.H. & H.R.R.*, 248 Mass. 502, 143 N.E. 312 (1924) (coal); *see* note 2 *supra*.

As the rule evolved under the Uniform Sales Act, a seller electing not to complete performance could recover lost profits under § 64(4) by showing it could not make substitute contracts on the market. *Norwood Lumber Corp. v. McKean*, 153 F.2d 753 (3d Cir. 1946); *Ahlbin v. Crescent Commercial Corp.*, 100 Cal. App. 2d 646, 649-50, 224 P.2d 131, 133-34 (4th Dist. 1950). Because the seller was required to make an *ex ante* choice the seller could not reasonably expect a profitable resale market. *Zimmerman Radio Corp. v. Bronson & Townsend Co.*, 108 Conn. 632, 634, 144 A. 301, 303 (Conn. 1929).

In its 1949 draft form, U.C.C. § 2-708 did not indicate whether these special-order sellers were entitled to lost profits. The 1954 revisions added language, unaccompanied by explanation, designed to incorporate an appropriate measurement for the salvage cases: "due allowance for costs reasonably incurred and due credit for payments or proceeds of resale." UNIFORM COMMERCIAL CODE: AMENDMENTS APPROVED BY ACTION OF THE AMERICAN LAW INSTITUTE AND THE NATIONAL CONFERENCE OF COMMISSIONERS ON UNIFORM LAWS 14 (1954). Because the Code drafters abandoned the "available market" test, however, commentators argued that the salvage decision itself justified a lost-profits award. *See* J. WHITE &

discriminating medium of U.C.C. § 2-708(2)<sup>16</sup> has been based on the assumption that reselling equivalent goods to others on the market does not replace the breached contract. But the conclusion suggested by this assumption—that notwithstanding a resale market for the goods, market damages frequently measure losses inaccurately—is neither obvious nor compelled.

Part I of this article attempts to determine more precisely when compensation requires the award of lost-volume profits. Our analysis reveals that the seemingly simplistic market damages mechanism is more accurate than has generally been assumed. Indeed, the apparent reduction in enforcement costs associated with market damages suggests that, so long as the seller has a market for its goods, the most efficient damage rule is a rebuttable presumption that the seller replaces the breached contract.<sup>17</sup>

Part II examines the mechanism for measuring the losses of those sellers who salvage an incomplete performance after the buyer's breach. We conclude that the conventional components claim for lost profits is overinclusive. Only those sellers of special-order goods who cannot rely on any market require a lost-profit award.<sup>18</sup> Further, economic analysis suggests that courts may frequently overcom-

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R. SUMMERS, *supra* note 6, § 7-10, at 227. Although Professor Harris carefully limited the implications of his "components" category, subsequent commentary has been less precise, endorsing lost-profits awards for the "components seller" even when the goods are readily marketable.

16. The general language providing access to lost profits under § 2-708(2), *see* note 13 *supra*, has caused considerable consternation in courts evaluating damage claims. Cases presenting the least difficulty are those involving specially manufactured goods, where the absence of a resale market induces a salvage decision under U.C.C. § 2-704(2). Courts uniformly agree that § 2-708(2) remains the only appropriate measure of damage for the salvaging seller of special-order goods. *See, e.g.*, Anchorage Centennial Dev. Co. v. Van Wormer & Rodrigues, Inc., 443 P.2d 596, 599 (Alas. 1968); Detroit Power Screwdriver Co. v. Ladney, 25 Mich. App. 478, 181 N.W.2d 828 (1970); Chicago Roller Skate Mfg. Co. v. Sokol Mfg. Co., 185 Neb. 515, 177 N.W.2d 25 (1970); Timber Access Indus. Co. v. U.S. Plywood-Champion Papers, Inc., 263 Or. 509, 524-26, 503 P.2d 482, 489-91 (1972).

In only two of these cases, however, was the court asked to rule whether the component-seller's use of § 2-708(2) rather than § 2-708(1) depended upon its ability to resell the finished goods. *See* Detroit Power Screwdriver Co. v. Ladney, 25 Mich. App. 478, 486, 181 N.W.2d 828, 834 (1970) (dictum) (lost profits remedy applicable where no market exists for contract item); Timber Access Indus. Co. v. U.S. Plywood-Champion Papers, Inc., 263 Or. 509, 525, 503 P.2d 482, 490 (1972) (dictum) (lost profits awarded even where "some market" existed).

17. This hypothesis mirrors the prevailing common law rule. Contract law traditionally presumed that if it had an opportunity to resell the goods on the market, the seller could fully replace the breached contract. Consequently, the difference between the market price and the contract price of the repudiated goods was thought to measure the seller's losses accurately. *See* text and citations accompanying note 20 *infra*.

18. *See* text accompanying notes 83-91 *infra*.



pensate these sellers by failing to credit the breaching buyer with all of the savings the breach produces. In addition, when several buyers breach contracts with a single seller, the later breaches generally produce proportionately larger losses to the seller.

## I. THE PROBLEM OF LOST VOLUME

### A. *Reexamining the Lost-Volume Presumption: A Replacement Model*

Sellers frequently advance lost-profit claims even though there exists an available market for the contract goods. These sellers claim that they have lost sales and can only be made whole by recovering the expected profits on the breached contract. Any breach leaving a manufacturer with unfilled productive capacity or a retail seller with standard-priced goods is generally believed to result in a lost sale.<sup>19</sup>

Common law courts were generally skeptical about the validity of these lost-volume claims. If the contract goods were on hand at the time for performance, the majority of courts limited the seller to market damages, reasoning that any resale adequately replaced the breached contract.<sup>20</sup>

Considering the resistance of pre-Code courts, what explains the paradigmatic lost-volume claim where excess capacity or supply triggers the presumption that an entire profit was lost by the breach? Disputes involving retailers of standard-priced goods exposed an apparent anomaly: Only nominal damages are awarded when market price is equivalent to contract price.<sup>21</sup> The resulting inference of un-

19. In both cases it is assumed that the ability of the seller to fill future orders (the manufacturer by expanding production; the retailer by ordering more goods from the wholesaler) prevents it from replacing the breached contract. Thus the seller "loses" a sale and its resulting profit. *See, e.g.*, 5 A. CORBIN, *supra* note 2, § 1100; J. WHITE & R. SUMMERS, *supra* note 6, §§ 7-7 to -9; Harris, *General Theory*, *supra* note 7, at 599-601.

20. *See, e.g.*, *Berger Mfg. Co. v. Phillips Hotel Operating Co.*, 89 S.W.2d 703 (Mo. Ct. App. 1935); *A. Lenobel, Inc. v. Senif*, 252 A.D. 533, 300 N.Y.S. 226 (1937), *modified*, 253 A.D. 813, 1 N.Y.S.2d 1022 (1938); *Genovese v. A. Lenobel, Inc.*, 148 Misc. 548, 265 N.Y.S. 338 (Mun. Ct. 1933), *rev'd on other grounds*, 154 Misc. 91, 275 N.Y.S. 521 (App. Term 1934); *Riedt v. Winters Drug Co.*, 191 Okla. 264, 128 P.2d 1008 (1942).

When the pre-Code courts rejected lost-profits claims, they consistently identified the existence of "an available market" for resale of the goods rejected by the breaching party as the critical issue in determining the appropriate damage mechanism. *See Charles St. Garage Co. v. Kaplan*, 312 Mass. 624, 45 N.E.2d 928 (1942); *Babbitt v. Wides Motor Sales Corp.*, 17 Misc. 2d 889, 192 N.Y.S.2d 21 (App. Term 1959); *Lowas Garage Co. v. Scheer*, 199 N.Y.S. 748 (App. Term 1923).

21. *Electrical Prod. Corp. v. Mosko*, 88 Colo. 447, 297 P. 991 (1931); *Torkomian v. Russell*, 90 Conn. 481, 97 A. 760 (1916); *Stewart v. Hansen*, 62 Utah 281, 218 P. 959 (1923).

When courts awarded lost profits, they did not explicitly use the lost-volume rationale as a basis for decision. Because of the language of Uniform Sales Act § 64(3), *see* note 13 *supra*, courts found either a "special circumstance" under subsection (3) or no "available market" in

dercompensation was reinforced by the gratuitous assumption that "volume sellers" have virtually unlimited profitable production capacity.<sup>22</sup> In order to evaluate these assumptions, it is first convenient to create an analytic model in which the seller's ability to replace the breached contract can be precisely observed. The case of *Neri v. Retail Marine Corp.*<sup>23</sup> provides a useful starting place for examining the as-

the sense of a costless resale. The feebleness of these efforts to justify a lost-profit recovery helped generate the movement toward a more neutral access to direct profits in U.C.C. § 2-708(2). See note 13 *supra*.

As Professor Harris correctly observed, that the seller recovered only nominal damages does not mean that the damage award was too small. It can mean that the plaintiff suffered no losses other than incidental damages. See Harris, *Radical Restatement*, *supra* note 7, at 95.

One might object that limiting the retail seller to nominal damages in these circumstances would fail to deter breach. This argument, however, misperceives the purpose of the compensation principle of contract damages. Contract damages do not deter breach, rather they require a choice between performance and *compensatory* damages. This rule promotes efficient breach decisions by providing the cheapest mechanism by which gains from breach can be fully exploited. A damage rule that deterred breach would require a costly pre-breach renegotiation of the assignment of rights—and a redistribution of the gains from breach. Not only would these additional transaction costs generate inefficiencies, but requiring the breacher to share some or most of its potential gains with the non-breacher would blunt its entrepreneurial instincts and reduce its investment in searching for alternative welfare-enhancing opportunities. See generally Goetz & Scott, *supra* note 1, at 558-68.

22. See generally 1 J. BONBRIGHT, *THE VALUATION OF PROPERTY* 304-05 (1937); 5 A. CORBIN, *supra* note 2, § 1100; W. HAWKLAND, *SALES AND BULK SALES* 178-90 (3d ed. 1976); Beale, *Damages Upon Repudiation of a Contract*, 17 YALE L.J. 443 (1908); Waters, *The Concept of Market in the Sale of Goods*, 36 CAN. B. REV. 360, 368-69 (1958); Annot., 24 A.L.R.2d 1008 (1952).

Of all the economic assumptions found in the legal literature, the assumption of "unlimited" capacity or supply has been one of the most misleading. See, e.g., 5 A. CORBIN, *supra* note 2, § 1100 ("If the seller is a manufacturer or producer of the subject of the sale, with capacity to produce enough such articles to *supply all probable customers*, the buyer's rejection does not make possible a second sale that the seller could not otherwise have made. *Every new customer would have been supplied* even if the buyer had kept the goods and performed his contract." (emphasis added)). Although Professor Harris has carefully exposed the premises necessary for an assumption of expansive capacity, see Harris, *Radical Restatement*, *supra* note 7, at 81-83, the analysis has typically been quite careless. See, e.g., W. HAWKLAND, *SALES AND BULK SALES* 183 (3d ed. 1976) ("This measure of damages will be used principally when the *seller has an unlimited supply of goods that sell for fixed prices*. . . . If the buyer has not breached, the seller would have sold two cars instead of one, for the purchaser on the 'resale' undoubtedly would have bought another car. In a situation in which the *seller has an unlimited supply of goods*, the value of his bargain with the breaching buyer can be ascertained only by awarding him the profit he has lost because of the repudiation." (emphasis added)).

Professor Shanker and several students at Case Western Reserve Law School registered the first serious challenge to the assumption of unlimited capacity. See Shanker, *The Case for a Literal Reading of UCC Section 2-708(2) (One Profit for the Reseller)*, 24 CASE W. RES. L. REV. 697 (1973); Comment, *A Theoretical Postscript: Microeconomics and the Lost-Volume Seller*, 24 CASE W. RES. L. REV. 712 (1973). Although these analyses are partially flawed and incomplete, they nonetheless represent a thoughtful and important first step in debunking the lost-volume myth.

23. 30 N.Y.2d 393, 285 N.E.2d 311, 334 N.Y.S.2d 165 (1972).

sumptions which support lost-volume claims.

Retail Marine, a dealer in marine equipment and supplies, contracted to sell a new boat to Neri for \$12,500. Marine then ordered and received the boat from its supplier. Six days after the agreement Neri repudiated the contract. Four months later Marine sold the boat to another buyer for the same price. When Neri sued to recover his downpayment, Marine counterclaimed for lost profits of \$2,500 under U.C.C. § 2-708(2), arguing that absent Neri's default it would have earned two profits rather than one. The New York Court of Appeals sustained Marine's lost-volume claim, holding that "the conclusion is clear from the record—indeed with mathematical certainty—that [market damages are] inadequate to put the seller in as good a position as performance . . . and hence . . . the seller is entitled to its [profit]."<sup>24</sup> The court categorized Retail Marine's situation as that of a dealer with an "inexhaustible" supply of boats; consequently, the second buyer did not replace the first.

The court's characterization of the resale as a nonreplacement logically supports Marine's lost-volume theory of recovery, but the record in *Neri* did not warrant this underlying nonreplacement assumption. Mere *ability* to supply additional volume in no way implies that such volume could have been supplied profitably. Even where the seller's ability to expand output seems virtually unbounded, logic indicates that a combination of cost and revenue restraints necessarily limits this ability. In a competitive market, Marine would have no control over price; therefore, its ability to supply additional potential boat buyers would be limited by increasing operating costs.<sup>25</sup> Alternatively, in a market where Marine had some control over price, the reduction in total revenues that price cutting ultimately imposes would restrain Marine from expanding volume at will by lowering price.<sup>26</sup> In either case, as we shall argue below, the breached volume may nonetheless be replaced whenever there exists

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24. *Id.* at 399, 285 N.E.2d at 314, 334 N.Y.S.2d at 169 (quoting U.C.C. § 2-708(2)).

25. See notes 29-30 *infra* and accompanying text. A generally thoughtful and carefully constructed student comment first used economic analysis to challenge the classic lost-volume claim in both competitive and monopolistic markets. Comment, *supra* note 22. Although the analysis of competitive markets is sound, the analysis of monopolistic markets is flawed by an erroneous assumption of price-cutting ability on the part of sellers with market power. *Id.* at 719-28.

26. Because the seller with market power can always lower price to find new buyers it is tempting to assume that such a seller will never "lose" a sale, since price cutting would eventually find a replacement. See Comment, *supra* note 22, at 722-26. This analysis incorrectly assumes that the reduction in total revenues that lowering price ultimately produces will not restrain the seller. If price reductions were profitable, the seller would make them even if the breaching buyer performed. Since the seller will reduce price if it maximizes profits regard-

an available resale market for the contract goods. In any event, the absence of evidence establishing the market and cost conditions for Marine deprived the court of any sound basis for holding that only a lost-profits award would make Marine whole. What factors, then, *should* be considered in assessing an accurate damage award? We shall attempt to address that question below with a series of models which isolate the key elements necessary to support a lost-profit claim.

1. *Measuring damages in a competitive market.*

Although perfectly competitive market conditions in the textbook sense rarely exist, hypothesizing them clarifies the conceptual problems in replacement-sale situations. Suppose that the evidence in *Neri* showed that Retail Marine sold its boats in competition with over a dozen other retailers, each of which carry the standard national brands of marine equipment and supplies. Because a boat is a major purchase, consumers "shop around" and react sensitively to price differences among sellers.

Such facts are consistent with the hypothesis that Marine lacked market power and was the "price taker" of the traditional competitive model in economic theory. What does this hypothesis imply? In a purely competitive market, any post-breach sale is a replacement for the breached contract and never embodies lost-volume profits. This is true by definition, since in a perfectly competitive market the seller can dispose of all output produced at the going market price.<sup>27</sup> Figure 1 summarizes this result.

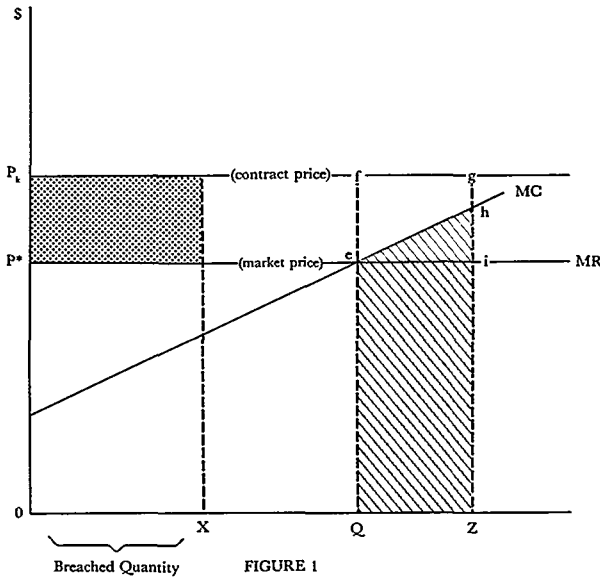
In Figure 1, the height of the line MR measures the marginal additions to revenue as quantity sold is varied along the horizontal axis. This marginal revenue curve is perfectly horizontal because additional sales by the competitive seller have no influence on price. The marginal revenue curve's height  $OP^*$  is equal to the market price for noncontractual output including replacement sales. Assume that marginal production costs vary with output as represented by curve MC. A commercially reasonable seller<sup>28</sup> will sell  $Q$  units after the breach, precisely the same number as if the buyer had not

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less of whether the buyer breaches, the possibility of price cutting is not relevant to whether the seller replaces the breached contract.

27. Comment, *supra* note 22, at 717. Generally, a seller will not use any excess capacity to supply buyers beyond the point  $Q$ , at which marginal cost and marginal revenue are equal. This analysis assumes sufficient demand to allow the seller to maintain output at  $Q$ .

28. The behavior of a "commercially reasonable seller" mirrors the economic notion of a profit-maximizer who sells to the point at which marginal cost equals marginal revenue.



breached.<sup>29</sup>

If we assume that the breached contract was for some quantity  $X$  at price  $P_k$ , how does the seller's post-breach position compare to its position under full performance? Had the buyer honored the contract, the marginal revenue on  $X$  of the units sold would have been higher by the contract-market price differential ( $P_k - P^*$ ), and the seller's revenues would have exceeded actual revenues by the shaded rectangular area in Figure 1. In the normal case, where the repudiated quantity  $X$  is less than or equal to the post-breach volume  $Q$ , the replacement sale of  $X$  units under U.C.C. § 2-706<sup>30</sup> yields true losses as measured by the difference between resale and contract prices. In the unusual case where the contract exceeds the optimal volume  $Q$  at the current market price  $P^*$ , the seller may be obliged to claim damages on units that would be unprofitable to produce under the post-breach conditions.<sup>31</sup> But, as long as the goods have an available market, the contract-market formula still measures these additional losses appropriately. The only change from the standard result is that where the seller is left with unproduced goods, it has

29. If the breach occurs before production, the seller would presumably produce at  $Q$  whether the contracted quantity was greater than, less than, or equal to  $Q$ .

30. For a discussion of seller's resale remedy, see note 12 *supra*. An action based on hypothetical resale through proof of market value under U.C.C. § 2-708(1) achieves the same result.

31. After a seller contracts to produce a quantity larger than  $Q$ , other factors such as a change in the relative costs of production may make some units unprofitable.

saved costs that it would have incurred on performance. Figure 1 shows the appropriate concept of costs to be credited against the contract-market differential. Assume a very large contract, such that the difference between the optimal volume  $Q$  and the original contract volume  $Z$  will not be commercially reasonable to produce if the buyer breaches the contract. The *gross* costs avoided by not producing units in the range between  $Q$  and  $Z$  are represented by the entire cross-hatched area under the marginal cost curve in Figure 1. But nonproduction also deprives the seller of revenues ( $QeZ$ ), which it would have gained from reselling the units at the market price. Area  $efgh$  corresponds to the correct damages attributable to the unproduced part of the contract, based on the standard formula of the contract-market differential (the entire rectangle  $efgi$ ) minus the net avoided costs (triangle  $ehi$ ).<sup>32</sup> This added complication in no way affects the fundamental result that any resale in a competitive market must constitute a replacement creditable as an offset to the original breach. In sum, a perfectly competitive market rules out the *Neri* court's award of lost-volume damages. Such an award would place the seller in a better position than performance.<sup>33</sup>

## 2. *Measuring damages for the seller with market power.*

The perfectly competitive model is too simple for the real world. First, few sellers are perfect price takers able to sell all of their output at the market price. Second, a firm's marginal operating costs in

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32. The Code market-damages scheme clearly incorporates these cost savings. U.C.C. § 2-706 and § 2-708(1) both include a deduction from damages for "expenses saved in consequence of the buyer's breach."

33. This conclusion assumes that in a competitive market buyers are not scarce at the market price and that firms' sales are constrained only by rising operating costs. Though rising operating costs may not be empirically determinable, once we posit competitive demand conditions, rising marginal costs necessarily follow because otherwise each firm would supply an infinite volume of goods at current market prices. If we assume marginal revenue is constant, cost must rise in order to yield a determinate and finite profit-maximizing output with marginal cost equalling marginal revenue. For example, a commodities seller has any number of buyers for its output. The reason an individual seller does not supply all the demand for wheat or corn is that ultimately the costs of producing or selling additional units exceed expected revenues. Such a seller will sell the same volume whether or not a given buyer breaches. Awarding this seller the entire profit "lost" from the breach places it in a better position than performance would have, thus violating the compensation principle.

Although the assumption of pure competition is a strong one for most markets, a number of real-world circumstances approach this idealized polar case. The legal implications of damage measures for those cases which cluster toward the competitive model are explored more fully below. *See* text accompanying notes 63-64 *infra*. The next section of this article considers the effects of breach where competitive conditions cannot be assumed even as a plausible approximation.

many cases may be nearly constant over wide ranges in output. Hence we must extend the analysis to more complex cases.<sup>34</sup>

In a purely competitive market, the seller cannot affect the price at which its goods are sold. If it increases its price, it will lose all sales.<sup>35</sup> By contrast, a seller with market power can increase price and still retain many of its buyers.<sup>36</sup> We can illustrate conditions of market power by assuming a different set of facts about the seller in *Neri*. Assume now that Marine is one of three large retailers of commercial boating equipment and supplies in a large metropolitan area. Not only do these retailers carry national brands, but each firm carries under its own name a variety of locally manufactured equipment. Marine is therefore selling in a mixed market which economists associate with monopolistic competition. If Neri's breach occurred under these conditions, how would Marine's damages be measured? The replacement price of the repudiated boat triggers the appropriate damage measure. If Marine cannot resell the boat in its marketing area for a "reasonable price," it can use § 2-709 to enforce the contract and recover the full purchase price from Neri.<sup>37</sup> On the other hand, when Marine can resell the goods, then either of the U.C.C.'s market damage measures will provide the appropriate price

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34. One of the "more complex cases" not dealt with at all in this article is where market power exists in the buying side of the market, *i.e.*, so-called monopsonistic or oligopsonistic markets. There are two reasons for this omission. One is that these situations are of comparatively little empirical importance. The second is, quite frankly, an expositional one. When market power exists on both sides of the market, the relevant analytical models are not only immensely more complex, but they also yield a range of indeterminacy in their results. For a relatively straightforward indication of how the material below would be modified by the inclusion of buyers' market power, the interested reader may consult the "bilateral monopoly" section of any standard microeconomic theory text. *See, e.g.*, G. STIGLER, *THE THEORY OF PRICE* 207-09 (3d ed. 1966).

35. Reexamining Figure 1 will confirm this basic economic assumption. In a competitive market, the firm is a "price taker" facing a market price, and its production decisions do not affect the horizontal line MR.

36. Market power is defined as the ability to affect the quantity of goods sold by adjusting prices. The demand curve for such a seller is downward-sloping.

37. Under U.C.C. § 2-709(1)(b) the seller can recover the purchase price of identified goods if it is "unable after reasonable effort to resell them at a reasonable price or the circumstances reasonably indicate that such effort will be unavailing." The central question is what constitutes a "reasonable price." As the analysis below will suggest, a buyer will breach rather than accept and resell only if it believes that the seller can resell more cheaply. *See* notes 48-50 *infra* and accompanying text. If the buyer did not think the seller had a competitive advantage, it would be indifferent between performance and its own resale on the one hand and breach and damages on the other.

The purchase-price recovery under § 2-709(1)(b) is therefore the mechanism allowing a seller to refuse an "offer" to resell by showing that it is not best able to minimize the costs of the breach. Thus, a "reasonable price" under § 2-709(1)(b) is any price higher than the sum of the price the buyer could achieve plus the transaction costs of resale by the buyer.

adjustment.<sup>38</sup> But if Marine wants to recover additional damages through a lost-volume claim, can it properly invoke lost-profit recovery under § 2-708(2)? The model developed below considers this question.

The model embodied in Figure 2A assumes that Marine can supply boats at an increasing marginal cost, as indicated by curve  $MC_1$ .

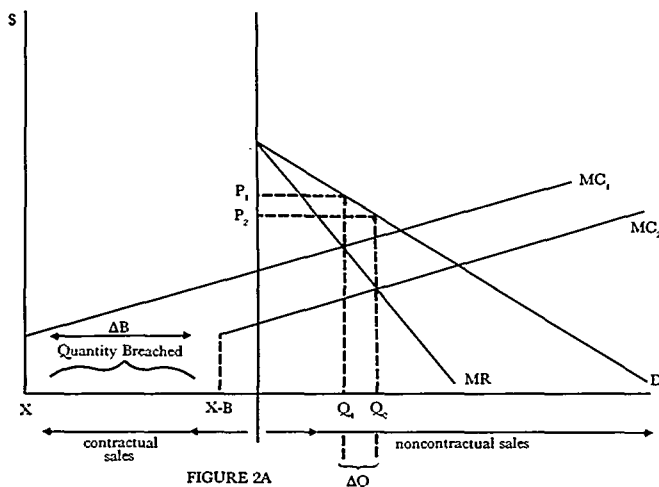


FIGURE 2A

A seller such as Marine will typically offer this output in two distinct markets. Some portion of its profitable capacity will be committed to fixed contracts for future performance. In addition to its contractual obligations, the seller will also examine the possibilities of selling some additional output to other buyers at spot prices. When one of its contractual obligations is breached, this noncontractual market will generally provide the seller opportunities for resale. In Figure 2A, the number of units under contract (including Neri's) is represented as  $X$  units.<sup>39</sup> Marine's pricing and output decisions for *additional* sales of units not contractually obligated are constrained by

38. See note 12 *supra*.

39. Although our analysis assumes that a seller will produce goods for sale in both markets—the contract market and the spot market—Figure 2A and subsequent graphs will depict the dynamics of output only in the spot market because it alone provides the potential for replacing contractual output lost by breach.

For its contractual goods, Marine's marginal revenue curve will be at the height of the fixed contractual prices for the contract units. Ordinarily, in the case of breach this will be at a point equal to or greater than the intersection of the spot MR curve with the zero axis for spot production. If the contract price were less than the spot price and if transaction costs for buyer resale were not high, the buyer could profitably resell rather than breach. On the other hand, if the contract price is higher than the market price, the buyer's incentive to perform and resell is much smaller. For a discussion of frictionless resale, see notes 44-47 *infra* and accompanying text.



the negatively sloped market demand curve  $D$  and the corresponding negatively sloped marginal revenue curve  $MR$ . As Figure 2A is drawn, Marine contemplates filling its contractual obligations for  $X$  units and then selling additional units at a price of  $P_1$  until  $Q_1$  units are sold. The output and pricing of the additional units is determined by the intersection of the marginal cost curve  $MC_1$  and the marginal revenue curve  $MR$  at the profit-maximizing output.<sup>40</sup>

How will Neri's breach affect Marine's decisions about output and pricing? In Figure 2A, the area representing contractual sales would shrink by  $B$  units, the amount of the breach, to  $X-B$ . If the curves determining the optimal number of additional noncontractual sales remained unchanged, Marine could legitimately assert a lost-volume claim. In such a situation, the court should reject Neri's argument that any additional sale "replaces" the breached order because Marine would indeed have "lost" the entire profitable volume represented by Neri's repudiated order. But the key factual premise of this lost-volume contention is invalid. The market for additional sales does not remain unaffected by the breach. Rather, removal of Marine's contractual obligation changes its price and cost constraints, expanding the opportunity for profitable additional sales.

Figure 2A reflects one of the changed circumstances Neri's breach produces. The breach brings about a significant change in the seller's marginal cost curve, resulting in lower costs and enhanced profitability for noncontractual sales. Some formerly unprofitable additional sales now become profitable. Had the breach not occurred, the seller would have sold  $X$  units under fixed contract and  $Q_1$  units in spot sales. Because the seller's marginal costs are increasing, the breach relieves it of the increasing costs attributable to the breached contract. Thus, if the breached contract equals  $B$  units, the relevant marginal cost curve for additional sales will shift to  $MC_2$ , which is  $B$  units to the right of  $MC_1$ , the pre-breach marginal cost curve.<sup>41</sup> As reflected in Figure 2A, post-breach marginal costs for all noncontractual units of production are lower than they would have been had the buyer performed.

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40. Figure 2A is drawn to reflect Marine's production situation after concluding its contract with Neri. The Neri contract is a fixed obligation for future performance. Marine will sell to other buyers on the spot market as long as the marginal revenues from additional sales are greater than or equal to the corresponding marginal cost of producing each additional unit.

41. While the marginal cost curve the seller faces for all units produced does not actually change, the relevant range of the curve the seller is able to exploit for noncontractual sales is different in the pre- and post-breach situations. We can explain this phenomenon graphically:

What are the implications of this reduction in marginal costs? In Figure 2A the new marginal cost curve  $MC_2$  produces an expansion in profitable spot market sales from  $Q_1$  to  $Q_2$ . The additional  $\Delta Q$  sales are fewer than the B units breached by the buyer, but they do constitute a partial replacement for the breached contract. The amount of cost savings produced by the buyer's breach is directly related to the slope of the seller's marginal cost curve; the lesser the slope, the lesser the replacement possibilities. A seller operating under constant marginal costs does not experience any production diseconomies; thus, the breach does not save the costs which performance would have incurred. Such a seller's post-breach quantity of noncontractual sales is precisely equal to its initial profit-maximizing output.<sup>42</sup> Alternatively, where the seller's marginal cost curve is ver-

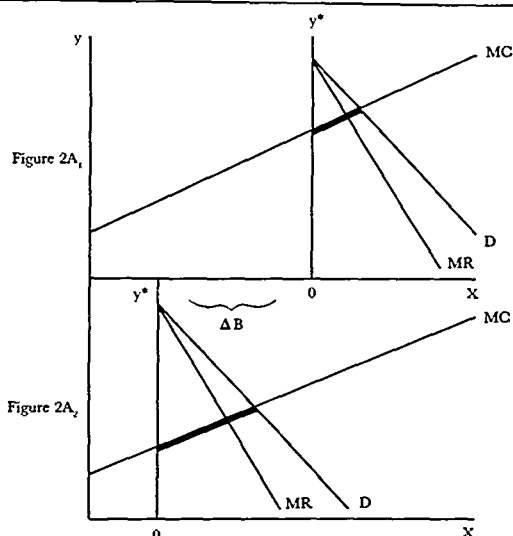


Figure 2A<sub>1</sub> represents the seller's pre-breach condition. The X-axis measures two relevant quantities—total goods produced and total noncontractual goods produced. The former is measured from the Y-axis and the latter from the Y\*-axis. The difference between the Y-axis and the Y\*-axis equals the amount of goods produced to meet contractual obligations. Figure 2A<sub>2</sub> represents the seller's situation after a breach of  $\Delta B$  units. The seller's marginal cost curve MC has not changed nor have the spot-market demand and marginal revenue curves. The decrease in the seller's contractual obligation moves the Y\*-axis leftward B units. The first units produced to supply spot-market demand are produced at lower marginal costs than in Figure 2A<sub>1</sub>, when the seller had larger contractual obligations.

Production of units for noncontractual sales can be varied depending on market conditions. As Figure 2A shows, the breach has two significant effects. The seller loses contractual sales, but it gains some noncontractual sales because the spot-market portion of the marginal cost curve is lower than before. The total effect of these changes is less than B.

42. When the seller's marginal costs are constant throughout the relevant range of out-

tical, the breached quantity will be totally replaced.<sup>43</sup>

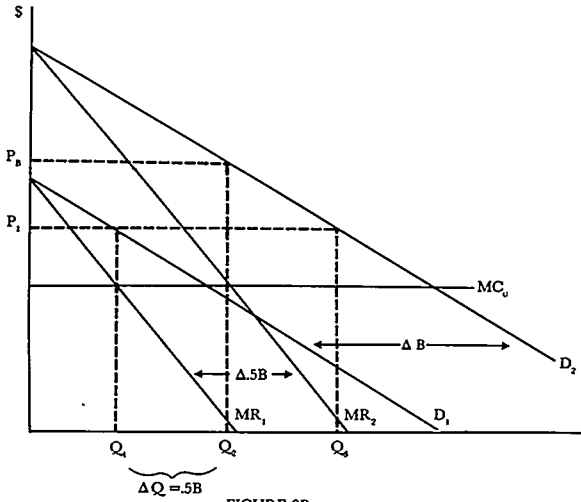


FIGURE 2B

The preceding analysis may suggest that a seller operating under constant marginal cost conditions will sustain classic lost volume

put, as represented by  $MC_0$  in Figure 2A<sub>3</sub>, the profit-maximizing amount of noncontractual sales  $Q$  will not change and no replacement sales will occur.

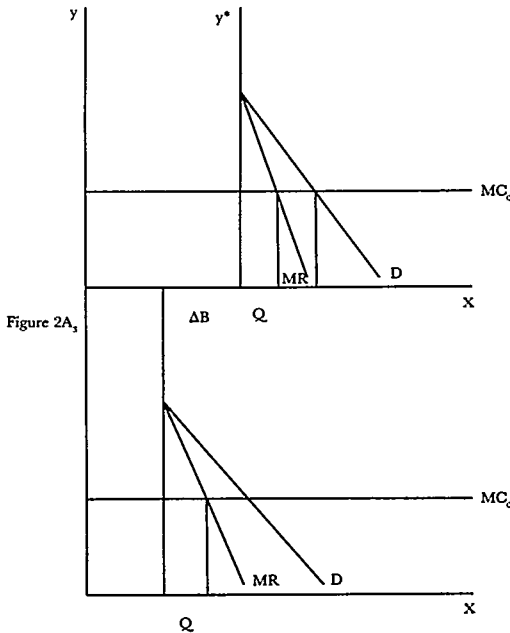


Figure 2A<sub>3</sub>

43. A vertical marginal cost curve can occur, for example, where productive capacity is fixed.

from a buyer's breach. However, in addition to its impact on costs, the buyer's breach also significantly affects the seller's replacement market. This effect is isolated in Figure 2B, where marginal costs are held constant over the relevant range of output. As long as performance remains a possibility, the seller's market for additional spot sales, represented by the demand curve  $D_1$ , reflects the risk that the buyer will dispose of the goods by reselling in the same market. Before the breach, the buyer can act as a seller to the extent of its contract. The buyer's breach removes this risk, thereby causing the seller's demand curve for noncontractual sales to shift rightward to  $D_2$ . Since the buyer's resale potential no longer exists, the seller can ignore the residual demand curve  $D_1$  in favor of the market demand curve  $D_2$ .<sup>44</sup>

In a frictionless environment,<sup>45</sup> as represented by Figure 2B, a breach of  $B$  units produces a corresponding shift of  $B$  units in the seller's demand curve. If the demand curve is linear, the seller's marginal revenues decline at twice the rate of any reduction in price, and the breach will produce a shift of only  $.5B$  units in the resulting marginal revenue curve  $MR_2$ . Since the seller will not rationally expand output when marginal costs exceed marginal revenues, the additional profitable output from  $Q_1$  to  $Q_2$  produced by the shift of  $B$  units in demand will be smaller than the  $B$  units breached by the buyer.<sup>46</sup>

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44. The residual demand curve  $D_1$  reflects the buyer's ability to resell the goods as a second seller, thus creating a duopoly situation. The new seller's supply is completely inelastic at  $B$  units. The demand curve  $D_1$  represents the market demand curve  $D_2$  minus the new seller's supply curve. In turn, the new seller's supply curve is determined by its costs of making each unit available, considering both selling costs and the retention value of the goods. (In the limiting case where both such costs are zero, the new seller's supply curve is a vertical line at the contractual quantity.) Ronald Coase first introduced this concept of residual demand to the economics literature in an analysis of pricing by firms with different cost conditions. See Coase, *The Problem of Duopoly Considered*, 2 REV. ECON. STUD. 137 (1935). It has been used more recently in Nutter, *Duopoly, Oligopoly and Emerging Competition*, 30 S. ECON. J. 342 (1963).

45. This assumed frictionless environment has two components: (1) the buyer will be able to resell the purchased goods in the spot market under the same conditions the seller faces for noncontractual units; and (2) there are no costs to the buyer associated with the resale.

46. An increase in quantity produced from  $Q_1$  to  $Q_2$  reduces the price at which the additional output  $\Delta Q$  can be sold and requires the seller to lower its price on those additional sales which were projected prior to the breach, thus reducing the firm's revenues on those sales. Any reduction in price associated with an expansive readjustment by a seller with market power reduces revenues on all units of production, causing marginal revenues to decline more rapidly than price. In the special case of the simple linear demand curves used in Figures 2A and 2B, marginal revenues decline at precisely twice the rate of any reduction in price. Thus, replacement sales for linear demand curves amount to exactly half of the breached quantity.

Although this analysis suggests that any shift in demand associated with the breach will only partially replace the lost contract, closer analysis will confirm that a shift of  $B$  units in the seller's non-contractual demand curve will actually place the seller in a better position than had the buyer performed. Figure 2B summarizes this result. Following the breach-induced demand shift, a seller could expand noncontractual output at the pre-breach price  $P_1$ , readjusting output from  $Q_1$  to  $Q_3$ . This readjustment would equal the  $B$  units breached, thus fully replacing the breached contract. But the seller with market power will not expand output to fully replace the *volume* lost by the breach. By producing only the additional quantity  $\Delta Q$ ,  $(Q_2 - Q_1)$ , this seller can raise its price to  $P_B$  and earn total *profits* exceeding those from a full replacement expansion from  $Q_1$  to  $Q_3$  at the lower (pre-breach) price  $P_1$ .

A shift of  $B$  units of demand will therefore always produce an expansion in profitable output equal to some fraction of the breached units and a new profit-maximizing price that will allow the seller to more than fully replace revenues lost by the breached contract. The seller's ability to exploit the breach and exceed the gain available from performance is a function of the seller's assumed monopoly power. If the breach permits the seller to recapture buyers for the full amount of the breached units, market power produces monopoly profits exceeding the gain from full performance.

Our assumption that but for the breach the buyer would sell the goods in competition with the seller explains this result. If the transaction costs were zero, the monopolist would be better off if fixed obligations were breached, thereby eliminating the breaching buyer's ability to "spoil" the market through resale. Since the compensation principle ensures the seller full recovery from a breaching buyer, the monopolist is better off after a breach because it can earn monopoly profits on sales to recaptured buyers. In essence, the contract-market formula presumes a competitive market. This damage rule *over*compensates the seller with market power, unless the buyer is credited with these additional breach-related profits as "expenses saved in consequence of the buyer's breach."<sup>47</sup>

The demand effect of breach is conceptually independent of the

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47. Because the model is developed in a frictionless environment, it is not surprising that few real-world applications of this phenomenon can be observed. Some positive transaction costs are associated with any breach. It is difficult to estimate how many sellers, in fact, do better by breach plus damages than by performance. However, the theoretical validity of the model is relevant to the choice of the presumption that operates most efficiently to assign loss where information costs prohibit true measurement.

cost effect. Indeed, in any case where marginal costs are increasing, savings in marginal costs will provide an additional opportunity to expand output beyond the expansion attributable to a shift in demand. Figure 2C illustrates the combined effects of both of the changed conditions attributable to a buyer's breach. First, the breach produces a shift of  $B$  units in the demand for noncontractual sales, causing a  $.5B$  shift in the resulting marginal revenue curve  $MR_2$ . If marginal costs were constant, as reflected in cost curve  $MC_0$ , the breach-induced shift in demand would produce a profit-maximizing expansion of output from  $Q_1$  to  $Q_2$  at a new price of  $P_0$ . As noted above, in the frictionless sale situation this expansion results in profits greater than those gained from performance. Assuming that the seller's marginal costs are increasing, as represented by cost curve  $MC_1$ , the breach causes the seller's post-breach marginal cost curve  $MC_2$  to shift  $B$  units rightward. This second effect enhances the replacement possibilities of the breach by permitting a profitable expansion from  $Q_2$  to  $Q_3$ .

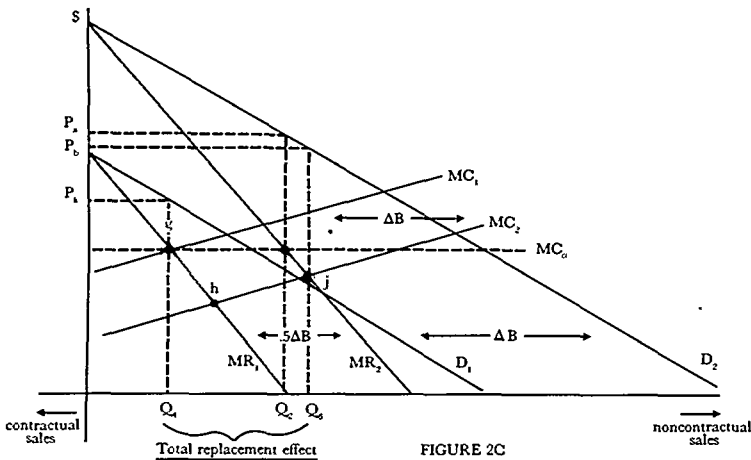


FIGURE 2C

The replacement phenomenon observable in the preceding model is based on two basic economic premises: First, marginal diseconomies of scale or increasing marginal costs exist in the production process. Under these circumstances, a breach lowers the cost of the last contractual unit produced, thus making it profitable to partially expand the output for noncontractual sales. Second, the buyer's breach-performance choice also affects the seller's market for additional sales. The buyer's decision to breach will occur in several stages. Initially, changed circumstances may make other opportunities preferable to retaining goods. At that time the buyer must de-

cide how best to salvage the contract. It can breach, or it can accept delivery of the goods and resell them in the seller's market. Once we posit compensatory damages, the buyer's decision whether to breach or accept delivery of the unwanted goods and then dispose of them depends on whether the seller can resell the contract goods on the buyer's behalf more cheaply than the buyer could sell them. Where neither party enjoys any advantage in reselling the goods, the buyer has no incentive to choose breach over its own attempts at disposition. Performance and resale yield the same post-contract result as breach and payment of damages.<sup>48</sup> Thus, the buyer's belief that the seller enjoys a comparative advantage in reselling the goods will induce it to breach.<sup>49</sup> The breach permits the seller to capture the additional resale purchaser who would have bought from the buyer on resale had the contract been performed.<sup>50</sup>

But what happens if the shift rightward in noncontractual demand is less than the full amount of the B units breached? This possibility exists when the buyer's costs of resale in the market exceed the seller's. This disparity occurs in most markets.<sup>51</sup> Assume, for example, that market entry is costly for the buyer, or that the price includes risks which the buyer is reluctant to assume. In such cases the buyer may prefer other choices, including retaining the un-

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48. This observation is necessarily inferred from the compensation principle of contract damages. The goal of contract damages is not to induce performance, but merely to require a choice between performance and compensatory damages. See Goetz & Scott, *supra* note 1, at 558.

The compensation principle induces a party to breach in order to capture the gains from alternative opportunities whenever the payment of expectation damages makes the non-breacher indifferent between breach and performance. This result is "efficient" since the non-breaching party loses nothing, while the breacher benefits from non-performance.

Once a compensation principle is postulated, however, no incentives would lead a buyer to prefer breach over performance. In either case the buyer suffers a loss equal to the difference between the contract price and the market price for the goods.

49. The damage rule will operate efficiently where it induces a breach by the buyer whenever the seller has an *ex ante* resale advantage. Such a rule permits the parties to minimize the costs of breach.

50. The buyer's ability to resell in the seller's market is a central part of the thesis supporting the replacement effect observed in the model. Although the observation may initially seem counter-intuitive, the argument has been made successfully in one lost-volume case. See *A. Lenobel, Inc. v. Senif*, 252 A.D. 533, 300 N.Y.S. 226 (1937), *modified*, 253 A.D. 813, 1 N.Y.S.2d 1022 (1938).

51. Higher resale costs for the buyer could be expected in a wide range of circumstances. Except in near-perfect markets such as the securities and commodities exchanges, the buyer will encounter barriers to entry making resale more costly relative to other options, such as retaining the unwanted goods. In addition, the resale may require the buyer to assume risks of defects in quality or title that are particularly costly for it to bear. In sum, absent empirical data, greater reselling costs for the buyer would seem to exist in most markets.

wanted goods, over a resale in the seller's market. Higher resale costs reduce the risk that a performing buyer will resell in the seller's market; therefore, the seller will not discount the demand for additional sales by the full amount of the contract goods. In this case,  $D_1$  will be closer to  $D_2$  in Figures 2B and 2C. Thus, breach will produce only a partial shift in demand, possibly resulting in less than total replacement of lost profits. Alternatively, in a mixed market with monopolistic competition there may be several sellers with overlapping markets. In this case all sellers share the risk of resale by any buyer.<sup>52</sup> Higher buyer resale costs or the presence of additional sellers reduce the risk that buyer's resale would capture B units of the seller's spot market. This lower risk is reflected by a discount of less than B units in the seller's pre-breach residual demand curve. Thus, the breach will only partially expand the seller's spot market and losses may not be fully replaced. The precise impact of either entry costs or shared resale risk cannot be generally determined.

In sum, the existence of higher resale costs for the buyer, as well as the presence of competing sellers in the market, may result in less than total replacement of the breached contract.<sup>53</sup> The amount of revenue replaced by the breach will vary directly with the amount of breach-related expansion in the seller's market. As long as the "available market" assumption holds, however, the breach will produce some expansion in the seller's market for additional sales.<sup>54</sup> This new opportunity will make possible at least a partial replacement of the breached contract. The amount of replacement in individual cases can be more confidently predicted by observing the polar relationship between the competitive and market-power replacement models. In retail markets additional sellers and higher resale costs for consumer buyers might suggest that a seller with market power could effect only minimal replacement by breach-induced

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52. A seller dominating the market captures substantially all of the enhanced demand from eliminating the resale competition. When other major competitors are present, any effects of variations in resale competition are shared among the sellers roughly in proportion to their market shares.

53. The limiting case where no portion of the seller's lost volume would be replaceable requires the coincidence of two conditions—constant marginal costs and impossibility of resale. Here, by definition, the breach would affect neither the seller's cost conditions nor its market. In such a case, where no expansive readjustment is possible, the buyer can compensate the seller for the breach of B units only by giving the seller its entire expected profit.

54. Although conditions of constant marginal costs over a wide range of output can be routinely predicted, the "available market" assumption necessarily excludes absolute barriers to buyer's resale at any price, because it requires a market for the goods and at some discount the buyer would be able to resell the contract goods.



changes in cost and demand conditions. Yet these same assumptions also imply that the seller's market more nearly approaches the competitive model observed in Figure 1. As the seller's demand curve approaches the horizontal line of pure competition, the assumption that the seller's volume is constrained by rising costs rather than lack of buyers becomes more compelling. If buyers can be found at or near the market price, substantial replacement by resale would be predicted. Conversely, in commercial markets with fewer and larger sellers, a seller will have greater market power but also a limited number of buyers at any specified price. Yet this seller can be expected to exploit breach-related changes in costs and demand in order to substantially replace lost revenues.<sup>55</sup>

### 3. *Summary of the replacement model.*

Obviously, the seller's capacity to supply the breached units in addition to its actual output is a *necessary* condition for a lost-volume claim. The lost-volume presumption mistakenly assumes that excess productive capacity is also a *sufficient* condition for such an award. But the relevant issue is not whether the post-breach firm had the physical capacity to produce the breached units in addition to its actual volume, but whether it would have been profitable to do so. The validity of a lost-volume claim depends entirely on *the effect of the breach* on the seller's ability to sell to other buyers profitably.<sup>56</sup> If

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55. This observation can be illustrated with a simple example. Assume that the buyer breaches a contract to purchase one Olympus camera from a camera store in Washington, D.C. The seller sues for an entire lost-volume profit of \$25. Clearly, the existence of many competing camera sellers, and the apparent ability to sell many cameras without substantially increasing marginal costs, seem to undercut the buyer's claim that the breach removes a resale risk, thus permitting the seller to recapture another buyer. But the factual implications here are a double-edged blade. As the market-power model becomes less applicable, the competitive model better describes this seller's market. When such a seller's demand curve flattens out (assume, for example, that a 5% increase in price would eliminate almost all of its camera customers), the assumption that the seller is not constrained by lack of buyers but by increasing marginal costs becomes more compelling. In short, this seller will not "lose" an entire sale because an additional buyer is available at or near the market price.

56. Just as changed or unanticipated economic conditions often cause a party to breach a contract, unforeseen circumstances often appear to enhance the breach's impact or consequences. These unanticipated or changed circumstances will often appear to affect the seller's ability to replace the breached contract. Assume that changed circumstances, such as reduced production costs, permit Retail Marine to sell more boats profitably than the firm initially estimated. Subsequently, Neri breaches and the boat is resold to another buyer. When Retail Marine sues for lost-volume profits, it seems able to support its claim by establishing that an excess capacity remained after the breach and sale. Because the firm can now sell additional boats to more buyers, it seems plausible to conclude that the seller has "lost" the entire profit from the breaching buyer's contract. But this unanticipated additional profitable capacity is completely irrelevant to the calculation of the buyer's damages. Excess "volume" would have occurred without regard to the breach-performance decision by the

sales to other buyers are unaffected by breach, a lost-volume claim is justified because profitable volume then declines by the full amount of the breach. Conversely, the seller loses no volume if the breach alters its costs and demand conditions so that supplying other buyers becomes newly profitable.

The replacement model demonstrates that the buyer's breach increases the profitable volume of additional sales. In other words, a seller will not have the capacity to *profitably* supply all of the breached quantity in addition to its existing sales. In fact, performance by the buyer would make some existing sales unprofitable. When a seller operates in a competitive market, it will always have more available buyers than it can profitably supply; therefore, additional sales will always make up for any breached volume. The competitive seller will always sell the same number of goods, regardless of breach. A seller with market power has a limited number of buyers willing to purchase at its profit-maximizing price. Although this seller could conceivably lower its price and discover new buyers, price cutting reduces revenues and effectively restrains the seller from capturing additional buyers at lower prices. Indeed, such a seller has "lost" a sale. Nevertheless, the seller has not lost the entire profit which that sale would have earned. By refusing the goods, the defaulting buyer no longer can resell them and thus diminish the seller's pool of potential buyers. The breach, by removing the risk

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buyer. Had the buyer performed and resold the unwanted goods, it would ideally have captured one of the seller's resale purchases, leaving the seller with the same post-breach capacity. Indeed, a commercially reasonable seller will simply expand output and sell more. The situation resulting from the breach is unchanged.

Assume, for example, the pristine conditions reflected in Figure 2B of the replacement model, where the buyer's breach permits the seller to recapture an entire additional resale purchaser. If the buyer accepts delivery and then resells to a potential customer of the seller, the seller has the identical volume as it would have after breach. Because contract damages only guarantee the non-breacher a position equal to that of full performance, in measuring damages courts should consider only conditions attributable to the breach.

This analysis does not imply that changed conditions never affect the calculation of the seller's damages. If the opportunity to exploit the changed circumstance is directly attributable to the breach, any resulting gains are properly credited against the damage award. As we observed in Figure 1, in the typical case where the repudiated quantity of B units is less than or equal to the post-breach volume  $Q$ , courts should not credit savings in operating costs brought about by a reduction in output against the damages owed to the seller. But if the contract calls for a quantity of goods which exceeds the profitable post-breach volume, the buyer is entitled to a credit for the net cost savings caused by the reduction in output. The different results are easily explained. Only in the unusual case in which contract units exceed the adjusted output are the "expenses saved in consequence of the buyer's breach." *See* U.C.C. §§ 2-706, -708(1). Any time the seller can adjust output to meet changed conditions, it can achieve cost savings without regard to the breached contract.

that the seller may lose one of its limited noncontractual buyers, permits some expansion in the seller's market for additional sales.

Additionally, whenever the seller's production costs increase with additional sales, the buyer's breach also enables the seller to save costs on future noncontractual sales. Reduced marginal costs for other units of production lead to a further expansion in profitable output. But marginal costs for many sellers may be constant over wide ranges in output; thus the cost effect of a given breach is always an empirical question. Examining cost and demand conditions demonstrates that awarding sellers complete lost-volume profit recoveries is likely to overcompensate them.<sup>57</sup> In order to mirror true losses, the new profits made possible by replacement must always offset the seller's lost-profit claims.<sup>58</sup>

### B. *Legal Implications of the Replacement Model*

Information about the extent of replacement is necessary for precise damage measurement. Accurately measuring those profits recaptured by a given breach requires information concerning the presence of other sellers in the market, the extent of the resale risk, and the nature of the seller's cost and market conditions. Obtaining much of this information is extremely costly. Indeed, a crucial element in the calculus—the resale risk and its probable impact on the seller's market—may be totally inaccessible.<sup>59</sup>

Although information costs prohibit accurate measurement of true losses, the preceding analysis suggests that the common law presumption of total replacement is not demonstrably less accurate in

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57. The probability of overcompensation can also depend on the nature of the seller's production. Where the seller engages in sales of discrete units of equal value—widgets, for example—a breach of one unit will produce either total replacement or no replacement, since partial expansion is impossible. Yet this situation should occur only rarely. Even in the *Neri* case, for example, the sale of a single boat does not eliminate the possibility of a partial expansion of profitable output through increased sales in related, less-costly marine equipment.

58. See text accompanying note 47 *supra*. The reader is also invited to explore the intermediate cases by redrawing Figures 2A and 2B with greater or lesser slopes to the marginal cost and marginal revenue curves. Note that the slope of these curves has significance only in the relevant range neighboring their intersection point; the shape and position of the remainder of these curves does not affect the results.

59. Although changes in marginal costs are accessible through certain kinds of cost accounting systems, see text accompanying notes 101–04 *infra*, evidence of the seller's market and any breach-related changes in demand present particularly intractable proof problems. Establishing the effect of breach on the seller's market requires data describing the market for both new and used goods and the seller's relative market position. It seems implausible that the costs of acquiring this information in individual cases would be justified by any corresponding increase in accuracy.

assessing damages than the lost-volume presumption of no replacement for the "lost" sale. Absent empirical data, assumptions about typical cost and demand conditions necessarily limit judgments. It is initially tempting to urge that neither the lost-volume nor common law presumption is a useful rule for decision in view of their likely inaccuracy in any specific circumstances. Nevertheless, the extraordinarily high direct costs of proving true losses, and the uncertainty that error spawns, argue strongly for a legal presumption that guides results in the absence of rebutting evidence.

Examining the lost-volume litigation provides some basis for proposing a decision rule that will minimize enforcement costs. Cases raising lost-volume claims fall into three broad categories based on the markets in which the breach occurred. The first two categories—sales in commercial and commodities markets—raise strong factual parallels with the market-power and competitive models. Our analysis suggests that a presumption of replacement in cases arising under these market conditions will minimize enforcement costs. In the third category—the retail automobile market—factual circumstances make it difficult to construct efficient damage rules.

The lost-volume disputes arising under U.C.C. § 2-708(2) have been over commercial contracts between manufacturers, wholesalers, and retailers.<sup>60</sup> Typically, sellers in these cases have contracted to sell relatively large quantities of designated goods. After breach, they resell the goods to other commercial buyers and claim lost profits on the breached contract. A market-power model implying substantial replacement by resale most aptly describes the markets in which these contracts are made. Since many of these commercial markets have fewer and larger sellers than retail markets, each seller presumably has greater power to affect the price at which its goods are sold. In addition, the buyer's ready access to the wholesale market suggests that had it not breached the buyer would have been able to accept unwanted goods and resell them. These factors make it more likely that the seller will substantially replace the breached contract.<sup>61</sup> The pattern of facts in commercial lost-volume cases is consistent with the

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60. *E.g.*, *Famous Knitwear Corp. v. Drug Fair, Inc.*, 493 F.2d 251 (4th Cir. 1974) (wholesale sweaters); *Distribu-Dor, Inc. v. Karadanis*, 11 Cal. App. 3d 463, 90 Cal. Rptr. 231 (3d Dist. 1970) (bathroom fixtures); *Snyder v. Herbert Greenbaum & Assocs.*, 38 Md. App. 144, 380 A.2d 618 (Ct. Spec. 1977) (wholesale carpeting); *Neri v. Retail Marine Corp.*, 30 N.Y.2d 393, 285 N.E.2d 311, 334 N.Y.S.2d 165 (1972) (commercial boat).

61. In addition, many commercial sellers probably operate under conditions of increasing marginal costs, which would expand post-breach productive opportunities even more. *See* text accompanying notes 46-47 *supra*.

theoretical model suggesting substantial replacement. This supports the hypothesis that, absent rebutting data, a contract-market formula including incidental expenses<sup>62</sup> will more accurately approximate the seller's loss.

Contract disputes in the commodities market constitute a second category of cases where damage rules have been extensively litigated. In virtually every case, the court has adopted a contract-market formula.<sup>63</sup> The factual coincidence between these markets and the competitive model developed above justifies and explains this result. Sellers in commodities markets are the closest real-world examples of the archetypal "price taker" of pure competition. Since there are always ample buyers at the market price, an additional purchaser for the contracted goods will always appear. The only practical restraint on the output of commodity market sellers is the increasing cost of additional production and sales. Unless the buyer breached, the seller would not seek the additional "replacement" buyer because the seller would have incurred a loss in supplying the additional quantity.<sup>64</sup> These market conditions provide even stronger support than those in the commercial markets for an initial presumption that a resale replaces the breached contract. The contract-market differen-

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62. Both of the Code's market-damages mechanisms, § 2-706 and § 2-708(1), include recovery for incidental damages as provided in § 2-710.

Section 2-710 authorizes an award of incidental damages for costs "incurred in . . . [the] care and custody of goods after the buyer's breach, in connection with return or resale of the goods or otherwise resulting from the breach." This provision would clearly cover the costs of searching for and negotiating any additional replacement sales made profitable by the breach.

63. (1) *Code cases*: *In re Augustin Bros.*, 460 F.2d 376 (8th Cir. 1972) (corn); *Desbien v. Penokee Farmers Union Coop. Ass'n*, 220 Kan. 358, 552 P.2d 917 (1976) (wheat); *Procter & Gamble Distrib. Co. v. Lawrence Am. Field Warehousing Corp.*, 16 N.Y.2d 344, 213 N.E.2d 873, 266 N.Y.S.2d 785 (1965) (soybean oil).

(2) *Pre-Code Cases*: *Renner Co. v. McNeff Bros.*, 102 F.2d 664 (6th Cir.), *cert. denied*, 308 U.S. 576 (1939) (hops); *Schaefer v. United States*, 59 Ct. Cl. 134 (1924) (oats); *Rice v. Schmid*, 18 Cal. 2d 382, 115 P.2d 498 (1941) (flour); *Abercrombie v. Georgia Distrib. Co.*, 39 Ga. App. 654, 148 S.E. 296 (1929) (cottonseed meals); *Sorrells & Co. v. Ancona Co.*, 250 Mass. 381, 145 N.E. 564 (1924) (cotton); *Pierson-Lathrop Grain Co. v. Britton*, 195 Mo. App. 26, 189 S.W. 584 (1916) (corn); *Fahey v. Updike Elevator Co.*, 103 Neb. 245, 171 N.W. 50 (1919) (wheat and corn); *R.W. Rounsavall & Co. v. H. Herstein Seed Co.*, 25 N.M. 626, 186 P. 1078 (1920) (beans); *Clark v. Merriam & Millard Co.*, 223 S.W. 869 (Tex. Civ. App. 1920) (oats).

64. When the additional or marginal costs of soliciting and supplying an additional buyer exceed the additional revenues from that sale, the rational seller will sell no further goods. In a competitive market the marginal revenues for each additional sale are the same since the market price is "taken" by an individual firm. Thus the only reason that such firms would not supply all the buyers is that at some point the costs of making additional sales exceed the added revenues. *See* text accompanying notes 28-30 *supra*.

tial plus the incidental costs of searching for and negotiating the resale contract best measure the seller's losses.

Contracts involving commercial and commodities markets closely approximate the replacement model's polar cases of substantial market power and competition. A replacement presumption would therefore seem the more efficient response to the problem of measuring true loss. But the possibility of replacement is less predictable in the final litigation category—lost-volume claims raised by retail automobile sellers. Although automobile retailers have not litigated any lost-volume claims for over 20 years, this market deserves careful analysis because it illustrates conditions in which the prospects of replacement seem much smaller. Fixed price policies traditionally limited the dealer's flexibility in adjusting prices.<sup>65</sup> Further, automobile markets are frequently locational monopolies with few buyers at any given price; additionally, sellers face little competition from reselling buyers because the "lemon effect" severely depresses the auto resale market.<sup>66</sup> Finally, most sales are in single units of goods with relatively equivalent values; therefore, the seller either replaces completely or not at all.

Because of these special hybrid characteristics, in this third category we must carefully examine specific facts before predicting whether the car contracted for is sold to a new buyer who would not otherwise have purchased from the seller. The majority of automobile cases, all decided under the "available market" limitation of the pre-Code rule, have limited the seller to market damages, although in a number of instances the courts have found "special circumstances" justifying a lost-volume recovery.<sup>67</sup>

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65. Two observations reinforce this assertion: (1) No retail lost-volume cases have been litigated under the U.C.C. Indeed, in the only automobile litigation under the U.C.C. the seller limited its claim to the difference between resale and contract prices under § 2-706, plus incidental damages under § 2-710. *Lee Oldsmobile, Inc. v. Kaiden*, 32 Md. App. 556, 363 A.2d 270 (Ct. Spec. App. 1976). (2) In England, where fixed price regulation remains, the retail sellers association remains active in litigating such cases in order to preserve the lost-volume presumption. *See, e.g., W. L. Thompson Ltd. v. Robinson (Gunmakers) Ltd.*, [1955] 1 Ch. 177; *Interoffice Telephones Ltd. v. Robert Freeman Co.*, [1958] 1 Q.B. 190; *Robophone Facilities Ltd. v. Blank*, [1966] 1 W.L.R. 1428.

66. Because automobiles are complex and expensive products, any resale shortly after purchase generates a significant discount because potential purchasers assume a high risk of a "lemon".

67. Automobile cases denying lost-profit damages include: *Ford Motor Co. v. Fry*, 203 Ill. App. 46 (1916); *Chalmers Motor Co. v. Maibaum*, 186 Ill. App. 147 (1914); *Mossy Motors v. McRedmond*, 12 So. 2d 719 (La. Ct. App. 1943); *Charles St. Garage Co. v. Kaplan*, 312 Mass. 624, 45 N.E.2d 928 (1942); *A. Lenobel, Inc. v. Senif*, 252 A.D. 533, 300 N.Y.S. 226 (1937), *modified*, 253 A.D. 813, 1 N.Y.S.2d 1022 (1938); *Babbitt v. Wides Motor Sales Corp.*,

Clearly, in any particular case exhibiting these hybrid characteristics the actual amount of replacement is an empirical question. But the evidence suggesting that cases generally tend to cluster toward the poles represented in the replacement model supports a presumption of replacement in all cases. Classifying hybrid markets *ex ante* is costly. For example, some automobile retailers may operate in highly competitive markets, while others may enjoy substantial market power. The litigation costs of a more precise rule may well exceed any gain in accuracy. A generally applied replacement rule operates efficiently if sellers in uncharacteristic markets can rebut the presumption by offering evidence that market conditions diminish the probability of replacement.<sup>68</sup>

Of course, some sellers may still be unable efficiently to establish an alternative inference of lost volume. However, no seller is required to bear the risk of erroneous measurement. Any or all of the risks of breach can be reassigned by stipulating to damages or presumptions. By allocating the property rights initially, a replacement presumption clarifies the relevant issues for subsequent bargaining.<sup>69</sup>

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17 Misc. 2d 889, 192 N.Y.S.2d 21 (App. Term 1959); *Lowas Garage Co. v. Scheer*, 199 N.Y.S. 748 (App. Term 1923); *Genovese v. A. Lenobel, Inc.*, 148 Misc. 548, 265 N.Y.S. 338 (Mun. Ct. 1933); *Gilmore v. Battles*, 193 Okla. 396, 144 P.2d 114 (1943); *Schuenemann v. John G. Wallaeger Co.*, 170 Wis. 616, 176 N.W. 59 (1920).

Automobile cases granting lost profits because of "special circumstances" include: *Dolly Parker Motors, Inc. v. Stinson*, 220 Ark. 28, 245 S.W.2d 820 (1952); *Torkomian v. Russell*, 90 Conn. 481, 97 A. 760 (1916); *Stewart v. Hansen*, 62 Utah 281, 218 P. 959 (1923); *Smead v. Sutherland*, 118 Vt. 361, 111 A.2d 335 (1955); *Breding v. Champlain Marine & Realty Co.*, 106 Vt. 288, 172 A. 625 (1934); *Popp v. Yuenger*, 229 Wis. 189, 282 N.W. 55 (1938).

68. The ultimate question for a factfinder in such a case would be whether it is more probable than not that the seller replaced the breached contract. The kinds of informal proof that might be regarded as sufficient to support alternative inferences might include market conditions characterized by several sellers operating within overlapping sales areas, or evidence that the breaching buyer was isolated from the main market. Thus, for example, the existence of competition might well diffuse the risk that a buyer would decide to take the goods and "pollute" the seller's market. Alternatively, the presumption of replacement may be rebutted by evidence that if the buyer had taken delivery it would find resale in the market very difficult because selling the goods required special skills or service capabilities.

69. Because of the difficulty and uncertainty of establishing true losses, an agreed remedy provision in which the buyer assumes the risk of lost-profit damages upon breach would be valid and enforceable. See *Goetz & Scott, supra* note 1, at 559-60. Furthermore, no compelling rationale denies the parties the freedom to shift only the *presumption* itself from the seller to the buyer. For example, the agreement might provide that the buyer bear the risk of uncertainty and error in the form of a rebuttable presumption of lost volume. See *Lea & Walker, Efficient Procedure* at 7-12 (forthcoming paper). One objection to the freedom of individual litigators to rearrange the procedural mechanism to accommodate substantive allocations of risk is the possibility that adjudication may not achieve "truth" in an absolute sense. But if the goal of procedure is not abstract truth, but only accuracy or "justice" based on the

The rule is an efficient assignment where it specifies results that most parties would reach absent bargaining costs. This gain in analytical clarity should not be lightly dismissed.<sup>70</sup> It is tempting to observe that parties can always buy out of an inefficient legal rule, and if transaction costs are low the social effects of an inefficient rule are therefore minimal. If the parties do not contract around the legal rule, is that not a fair expression of their satisfaction with the normal outcomes? Yet the complexity of the lost-volume problem suggests that the information costs of exposing an overcompensatory rule are relatively high. Indeed, insofar as the lost-volume presumption seems presently to be overcompensating the seller, it is likely that the reason it does so is that the parties themselves do not perceive the overcompensatory effects.

An analysis of the three markets in which lost-volume cases are litigated supports the assumption that the market-damages formula is more accurate than most commentators have thought. In addition, this market analysis suggests a stronger assumption: *When the seller can dispose of its goods on the market, overall efficiency is best achieved by presuming that the seller is able to fully replace the breached contract.*

A replacement presumption fits neatly into the U.C.C. damages scheme.<sup>71</sup> This damage rule would limit the volume seller to contract-market and incidental damages unless rebutted by evidence that a combination of market and production circumstances prevents the breach from allowing profitable expansion.<sup>72</sup> Because of the high

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parties' subjective perceptions, such individual procedural autonomy is perfectly appropriate. See Thibault & Walker, *A Theory of Procedure*, 66 CALIF. L. REV. 541, 543-45 (1978).

70. The one case where the replacement effect of the buyer's breach was argued provides a useful example. In *A. Lenobel, Inc. v. Senif*, 252 A.D. 533, 300 N.Y.S. 226 (1937), modified, 253 A.D. 813, 1 N.Y.S.2d 1022 (1938), the court rejected an automobile dealer's lost-volume claim in the following terms: "The plaintiff says [a market formula] leaves it remediless; that on the resale to replace the defendant it depleted its number of prospects to the extent of one. . . . *This contention is specious. If the buyer had in effect assigned his contract of purchase by taking a delivery and immediately selling to another in the same area, and had thus abandoned his purpose to get a new car for himself, a depletion of prospects to the same degree would have occurred, and but one commission would have inured to the plaintiff.*" *Id.* at 535 n.36, 300 N.Y.S. at 229 n.36 (emphasis added).

71. Section 2-708(2) explains when market damages are inappropriate: "If the [market damages] measure . . . is inadequate to put the seller in as good a position as performance would have done then the measure of damages is the profit . . . which the seller would have made . . . ."

The language of § 2-708(2) is indiscriminating, giving no guidance for when the compensation principle requires lost profits. The replacement presumption would retain, absent rebutting evidence, a market formula for all cases in which the goods have an available resale market.

72. See notes 51-55, 68 *supra* and accompanying text.



cost of more precise data, courts should allow informal proof of market conditions that imply low replacement probabilities. For example, the seller should be able to rebut the replacement presumption when, in a noncompetitive market, it could show that the breaching buyer was isolated from the seller's main market.<sup>73</sup> The seller who sustains this burden is entitled to "lost-volume" profits for the entire breached contract.<sup>74</sup>

By reducing the enforcement costs of a seller's damage measures, a replacement presumption minimizes other inefficient effects of broadly conceived lost-profit damages. We observed earlier that a buyer's decision to breach rather than to accept delivery and dispose of the goods represents a determination that the seller enjoys a comparative advantage in reselling the unwanted goods. The buyer is in the best position to make the efficient choice, since it can more cheaply compare its selling costs with those of the seller. Undiscriminating endorsement of lost-volume claims systematically overcompensates the seller, inducing inefficient "no breach" decisions by the buyer.<sup>75</sup> Economic analysis suggests that a replacement presumption will minimize deviations from the compensation principle and will encourage efficient breach behavior.<sup>76</sup> When the goods have no established market, only specialized damage alternatives are available. In Part II we examine the accuracy of conventional measurement of lost profits by developing a model for measuring true losses when the seller's damages can be established only by proof of the changes in revenues and costs produced by the breach.

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73. For example, this might be true of incidental purchasers, foreign buyers, and buyers of merchandise that could be sold only if the seller had special expertise or the capacity to provide service.

74. Even when the presumption is regarded as successfully rebutted and lost-volume damages awarded, the true losses will be less than the entire estimated profit on the breached unit. Only if the buyer faces absolute barriers to market entry and the seller confronts constant marginal costs will a lost-volume presumption measure the seller's loss accurately.

75. Overcompensation induces the buyer that would otherwise breach to accept delivery and resell the unwanted goods in order to avoid the "punitive" damage award. Since the seller often can dispose of the goods more efficiently, the lost-volume presumption may impede the parties' ability to minimize breach costs.

76. A damage rule which systematically deviates from the compensation principle has several inefficient effects. Overcompensating the volume seller discourages efficient breach decisions because additional transaction costs are imposed on the buyer contemplating breach. Alternatively, erroneously compensating the salvaging seller when it discontinues performance will either insufficiently restrain breach or reduce the seller's incentives to mitigate the consequences of breach. See text accompanying notes 77-82 *infra*.

## II. MEASURING DAMAGES WHERE THE SELLER SALVAGES AN INCOMPLETE PERFORMANCE

### A. Redefining the "Components Seller"

#### 1. *The primacy of market damages where markets are available.*

In addition to the lost-volume problem, a second concern about the accuracy of market damages has animated the debate about lost-profit awards. Assume that the breach occurs before the seller has completed performance. Section 2-704(2) of the U.C.C. dictates that the seller use "reasonable commercial judgment" in deciding whether to complete performance and attempt a resale or to terminate production and salvage the breached contract.<sup>77</sup> What measure of damages is appropriate when the seller chooses to salvage its components of production? Most commentators suggest that market damages will grossly distort the true losses sustained by a "components seller." Since performance has been terminated, the contract-market formula bears no rational relationship to either the seller's contemplated or actual investment in the contract. Thus, it is argued, compensation requires a lost-profits award based on the difference between the contract price and the estimated costs of production.<sup>78</sup>

In reality, however, if a market for the goods is available the contract-market formula will accurately measure the salvaging seller's losses. Assume the buyer breaches a contract at \$100 because the market price has declined to \$50. The seller claims damages based on the \$50 price difference. The buyer objects, arguing that it would have cost the seller \$80—a sum exceeding the prevailing market price—to produce the contract goods. Thus, the buyer contends that damages are properly limited to the \$20 expected profit on the breached contract. But the buyer's argument does not isolate the relevant issue. As most common law courts recognized, the contract-market formula is an entirely appropriate mechanism for measuring this seller's losses.<sup>79</sup>

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77. The seller's choices are formally embodied in U.C.C. § 2-704(2); after breach the seller must use reasonable commercial judgment in deciding whether to complete manufacture and resell the completed goods or terminate unfinished performance and resell for scrap or salvage. See note 9 *supra*. The choice is properly based on the *ex ante* circumstances known to the seller.

78. See note 10 *supra*.

79. *Roehm v. Horst*, 178 U.S. 1 (1900); *Rice v. Schmid*, 18 Cal. 2d 382, 115 P.2d 498 (1941); *Varley v. Belford*, 156 N.Y.S. 597 (Sup. Ct. 1916); *Spencer Kellog & Sons v. Providence Churning Co.*, 45 R.I. 180, 121 A. 123 (1923); C. McCORMICK, *supra* note 2, § 173, at 659. In an action for breach of contract to purchase coconut oil, the court in *Kellog* held that

The existence of a market in which the seller can acquire the contract goods is the central criterion for retaining a market formula, even though the buyer breaches before completion. If the seller can transform its costs into the current market value by purchasing equivalent goods on the market, its internal costs become irrelevant once the market falls below them. Permitting the seller to recover the \$50 market damages even though its internal production costs would have exceeded the market price merely confirms the risk allocation resulting from a fixed-price contract for future performance. The executory contract is an exchange of risks: The seller purchases the chance that the market will decline and sells the chance that the market will rise. The seller has bargained for the opportunity, unimpaired by the buyer's breach, to exploit a declining market.<sup>80</sup>

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the cost of production was immaterial, since the seller could always go out and buy goods on the market to fill the contract.

Different considerations control when the seller is bound by its contract to acquire the components from a specific source. Several pre-Code cases involved sellers required to furnish coal from specific mines. After the buyer's breach the seller received as damages the difference between the contract price and the current market price of the coal, even though the acquisition costs from the specific sources were higher than the market price. *See* *United States v. Burton Coal Co.*, 273 U.S. 337 (1927); *Garfield & Proctor Coal Co. v. New York, N.H. & H.R.R.*, 248 Mass. 502, 143 N.E. 312 (1924). Although these decisions confirm the traditional preference for market damages, the damage awards were inaccurate. In each case the true loss was the difference between the seller's own cost of acquiring coal and the contract price—a lost-profits measure. A contract mandating a specified source is in essence a contract for special-order goods, in which the seller has no market opportunities to exploit. In terms of the distinction drawn in this article "no available market" could be established for coal at an acquisition price below estimated costs.

The accuracy of market damages in this context has only been challenged once under the Code. In *Jagger Bros. v. Technical Textile Co.*, 202 Pa. Super. Ct. 639, 198 A.2d 888 (1964), the buyer repudiated a contract to purchase yarn before the seller-manufacturer had completed performance. The seller recovered judgment for the full contract-market differential under U.C.C. § 2-708(1), and on appeal the buyer contended that damages should be limited to the expected profits (contract price less estimated costs) under § 2-708(2). The court relied on the common law rule in affirming the market-damages award, emphasizing that the existence of an available market and proof of the market price were the key criteria for using the market formula of U.C.C. § 2-708(1).

80. The contract-market formula is the efficient damage rule even where the seller is unable to exploit the changed market conditions. Assume, for example, that at the time of breach the seller has already spent \$40 toward estimated costs of \$80. In the absence of breach the seller would spend an additional \$40 to complete performance and would receive a profit of \$20 (\$100 contract price - \$80 costs). The seller could not profitably exploit the declining market because the cost of purchase on the market (\$50) plus sunk costs already expended (\$40) exceed its production costs (\$80). Market damages of \$50 (\$100 contract price - \$50 market price) will induce the seller to complete performance and sell the goods on the market to achieve the equivalent of its full performance profit position of \$20.

The seller who has partially completed performance will behave efficiently only if it completes production. The market price (\$50) exceeds the remaining production costs of \$40 (\$80 costs - \$40 sunk costs). The market-damages formula makes the seller whole by giving it the \$50 needed to achieve the full performance revenue position of \$100 only if it completes

What measure of damages is appropriate where the seller chooses not to complete performance, despite an available resale market, and the post-breach market price *exceeds* estimated costs? Here the seller would prefer expected profits (contract price less estimated costs), arguing that market damages will undercompensate for the breach since performance would have earned the estimated profits. In order to ensure mitigation, however, the damage rule must induce completion whenever the expected price exceeds the estimated costs of production. Only the contract-market formula will induce the seller to minimize costs.<sup>81</sup> This analysis supports those common law decisions limiting such sellers to market damages whenever a profitable resale market appeared available.<sup>82</sup>

In sum, careful analysis suggests that the conventional "components seller" is an overinclusive category. Whenever there is a market for the contract goods, market damages will accurately measure the salvaging seller's losses. The problem with an overly broad "components" classification is not merely that some sellers may be using a damage formula which entails difficult and costly proof. More importantly, the conventional analysis mistakenly suggests that in many cases of incomplete performance the seller's true loss is equal to its *expected* profits as measured by the contract price less estimated

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production and sells the goods on the market. A rule that allowed the seller to abandon performance and recover out of pocket expenses (\$40) plus lost profits (\$20) would be inefficient because it would make the seller whole without inducing mitigation of damages.

81. Using a market formula will not eliminate the importance of careful proof of the appropriate "market price." For example, assume there are two markets—a wholesale market in which the seller buys and a retail market in which it sells and in which the contract was made. Under U.C.C. § 2-708(1) the seller should recover the difference between the contract price and the *wholesale* market price at the time of the breach. Admittedly the market formula is merely a mechanism for recovering the seller's actual profits. But conventional lost-profit analysis errs not only in urging that this loss be established by more costly direct proof; it further holds that the proper quantum of loss is the *expected* profit, the difference between the contract price and estimated production costs, rather than the *actual* profit, contract price less wholesale market price, that performance would have earned.

82. *W.R. Grace & Co. v. Nagle*, 275 F. 343 (2d Cir. 1921); *Kincaid v. Price*, 18 Colo. App. 73, 70 P. 153 (1902); *Garfield & Proctor Coal Co. v. New York, N.H. & H.R.R.*, 248 Mass. 502, 143 N.E. 312 (1924). If the seller recovers lost profits when *expected* market price exceeds estimated costs, there is no incentive to complete manufacture even though resale is profitable. The only way to induce efficient post-breach decisions is to retain market damages as the *prima facie* measure whenever an available resale market exists. But since the seller must make the completion/salvage choice *ex ante*, in some cases the *ex post* market price may unexpectedly exceed estimated costs. Therefore, the availability of a profitable resale market must be determined at the time of repudiation. A rule permitting the larger recovery would be appropriate only when the seller can show (1) that viewed *ex ante* the decision to salvage reduced expected breach costs; and (2) that true losses exceeded the contract-market formula.

costs of production, rather than the *actual* profit as revealed by the contract-market formula.

2. *Lost-profit damages: the seller of special-order goods.*

The absence of an available market for the contract goods is the crucial factor signalling the necessity of specialized damage measurement. Assume, for example, that the buyer breaches a special-order contract before the seller has completed performance. Presumably, the buyer breaches because it believes that the seller can assess the salvage-completion choice efficiently and elect the alternative that minimizes expected breach costs.<sup>83</sup> If the seller reasonably elects to complete the remaining performance, the absence of a market for the goods entitles it to enforce the contract and recover the full purchase price from the buyer.<sup>84</sup> Alternatively, if the seller chooses to salvage its pre-breach efforts to produce the special-order goods, only direct proof of lost profits will measure damages accurately. Since the existence of a potential replacement market for the contract goods is a prerequisite to market damages, this "salvage seller"<sup>85</sup> is always entitled to establish losses equal to the revenues lost by the breach re-

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83. See note 77 *supra*.

84. See note 37 *supra*. Under U.C.C. § 2-709(1)(b), the seller may recover the purchase price of identified goods if it is "unable after reasonable effort to resell them at a reasonable price or the circumstances reasonably indicate that such effort will be unavailing." A number of courts have looked at the parallels between the alternative specialized remedies of price or profit. See, e.g., *City of Louisville v. Rockwell Mfg. Co.*, 482 F.2d 159 (6th Cir. 1973); *Detroit Power Screwdriver Co. v. Ladney*, 25 Mich. App. 478, 181 N.W.2d 828 (1970); *Timber Access Indus. Co. v. U.S. Plywood-Champion Papers, Inc.*, 263 Or. 509, 503 P.2d 482 (1972).

It is important to distinguish carefully the salvage and completion situations because typically they will produce different market assumptions. *Once the goods have been completed*, their specialized nature suggests that no market is available. This would also indicate that only one or a very few buyers would want them. In that case, the market might be monopolistic or oligopsonistic—both buyer and seller would have market power. Here the solution to the parties' post-breach bargaining is indeterminate. See note 34 *supra*. However, in the lost-profit situation considered in this paper the goods are not completed, and pre-breach efforts are salvaged. Thus, there will typically be a competitive demand for the seller's productive output.

85. This "salvaging" seller of special-order goods should be distinguished from the conventionally drawn categories of "jobbers" or "components" manufacturers of goods with an available market. Even though the breach causes the seller to terminate an incomplete performance, the fact of salvage alone is insufficient to signal an award based on estimated profits. The key question is whether the seller can exploit an available market for the contract goods. Courts have traditionally recognized the logic of this analysis. See, e.g., *Anchorage Centennial Dev. Co. v. Van Wormer & Rodrigues, Inc.*, 443 P.2d 596 (Alas. 1968); *Detroit Power Screwdriver Co. v. Ladney*, 25 Mich. App. 478, 181 N.W.2d 828 (1970); *Chicago Roller Skate Mfg. Co. v. Sokol Mfg. Co.*, 185 Neb. 515, 177 N.W.2d 25 (1970); *Timber Access Indus. Co. v. U.S. Plywood-Champion Papers, Inc.*, 263 Or. 509, 503 P.2d 482 (1972).

duced by any savings in costs.<sup>86</sup> The inartful and conclusory language of U.C.C. § 2-708(2) incorporates an equivalent mechanism for measuring lost profits:<sup>87</sup> Any seller for whom market damages are inadequate can recover the profit that the buyer's performance would have earned. Estimated profits are measured by the contract price less the variable costs incurred in producing the repudiated goods.<sup>88</sup> Estimated profits, however, will rarely represent the true losses of the salvage seller. Since, by hypothesis, the seller has not completed performance of the repudiated contract, the

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86. This statement can be expressed by a simple arithmetic formula:  $\Delta P = \Delta R - \Delta C$ ; where  $\Delta P$ ,  $\Delta R$ , and  $\Delta C$  symbolize the changes in profit, revenues, and costs respectively.

87. The lost-profits mechanism in § 2-708(2) provides: "[T]he measure of damages is the profit (including reasonable overhead) which the seller would have made from full performance by the buyer, together with any incidental damages provided in this Article (Section 2-710), *due allowance for costs reasonably incurred and due credit for payments or proceeds of resale.*" (emphasis added). The italicized language was added in 1955 in order to "extend the rule clearly to the right of repudiation and to clarify the privilege of the seller to realize junk value when it is manifestly useless to complete the operation of manufacture." UNIFORM COMMERCIAL CODE: AMENDMENTS APPROVED BY ACTION OF THE AMERICAN LAW INSTITUTE AND THE NATIONAL CONFERENCE OF COMMISSIONERS ON UNIFORM LAWS 14 (1954). Although the drafters intended to incorporate damages for the salvaging seller, the formula could no longer be easily applied to lost-volume cases. Most commentators have suggested that § 2-708(2) be read selectively in order to permit both "lost-volume" and "components" claims. See J. WHITE & R. SUMMERS, *supra* note 6, §§ 7-8 to -10, at 225-29; Harris, *Radical Restatement*, *supra* note 7, at 96-99; Schlosser, *supra* note 7.

88. A lost-profits award is not reduced by fixed or overhead costs. The only relevant deductions from contract revenues are those variable costs that are saved by the breach. Section 2-708(2) authorizes the recovery of gross profits through the rather cryptic reference to "profit (including reasonable overhead)." Thus, the amount of damage caused by the breach is the difference between contract price and net variable costs that the breach saves. A fixed cost such as "overhead" is not properly part of the "costs saved" since it would have been incurred even if the buyer had performed. Traditionally, courts have allowed sellers to exclude these overhead costs. See, e.g., *King Features Syndicate v. Courier*, 241 Iowa 870, 43 N.W.2d 718 (1950); *Jessup & Moore Paper Co. v. Bryant Paper Co.*, 297 Pa. 483, 147 A. 519 (1929). But see *Wilhelm Lubrication Co. v. Bratrud*, 197 Minn. 626, 268 N.W. 634 (1936); *Worrell & Williams v. Kinnear Mfg. Co.*, 103 Va. 719, 49 S.E. 988 (1905).

Some of the pre-Code cases that deny the seller the right to ignore overhead costs in estimating gross profits can be explained in terms of a presumption that time and capacity released by the breach *should* have enabled the seller to make new contracts that covered the overhead costs formerly allocated to the breached contract. See *Apex Metal Stamping Co. v. Alexander & Sawyer, Inc.*, 48 N.J. Super. 476, 138 A.2d 568 (1958); *Schubert v. Midwest Broadcasting Co.*, 1 Wis. 2d 497, 85 N.W.2d 449 (1957).

There are several recent commentaries on the proper treatment of fixed costs under § 2-708(2). See *Childres & Burgess*, *supra* note 7, at 854-56; *Speidel & Clay*, *supra* note 7. Professor Speidel's thesis, that recovery of revenues charged to fixed costs overcompensates sellers operating near profit-maximizing output, is flawed in its analysis. However, his conclusion that conventional profit awards will overcompensate sellers is valid. Like the pre-Code courts, the article in effect roughly approximates the true losses by limiting recovery of revenues charged to overhead, rather than recognizing that the seller is operating under increasing marginal costs.

breach releases productive capacity. Any sunk costs which the seller incurs and cannot now recoup are, of course, attributable to the buyer. Conversely, the mitigation principle induces reasonable efforts to salvage unused factors of production. Thus, the seller's recovery under § 2-708(2) is adjusted by the net costs and revenues attributable to the breached contract.<sup>89</sup> Estimated profit reduced by salvage will equal true losses, however, only when costs are accurately identified and the breach does not produce savings on other units produced by the seller.

The efficiency of conventional methods of measuring lost profits can be evaluated by examining the case of *American Metal Climax, Inc. v. Essex International, Inc.*<sup>90</sup> The seller (Amax) operated an aluminum reduction plant producing primary aluminum. Essex, the buyer, was a manufacturer of aluminum products. The parties contracted for Amax to supply 225 million pounds of special-order aluminum rods to Essex between 1968 and 1973. But changed conditions induced Essex to breach the arrangement, and Amax used the released capacity to produce 225 million T-ingots of aluminum, subsequently selling them to non-contractual buyers.

The court granted Amax its lost profits and, citing U.C.C. § 2-708(2), measured the seller's losses as follows.<sup>91</sup> The contract price of the 225 million pounds of aluminum rods was 25 cents per pound. The average cost of producing aluminum rods was 17 cents per pound, 15.5 cents of which was for molten metal. Despite Essex's objections to the seller's cost accounting evidence, the court concluded that Amax would have earned approximately 8 cents per pound for a total profit of \$18 million. The average cost of producing T-ingots in 1968 was 16 cents per pound, and their selling price during this period was 22 cents. Therefore, the court concluded that sales of 225 million T-ingots would yield profits of \$14 million. Deducting the net proceeds of the "salvage" from the estimated profits on the breached contract produced a damage award of \$4 million.

Without more complete production data, it is impossible to assess the accuracy of the court's damage award in *American Metal*. However, if the seller's marginal costs of production were increasing at breach, the profit lost on the Essex contract would be smaller than

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89. Rather than the simple way of measuring lost profit—subtracting *costs saved* (estimated variable costs less variable costs actually incurred) from *lost revenue* (contract price less the proceeds of any salvage), § 2-708(2) uses an alternative formula for reaching the same results: *Lost profit* = (contract price - estimated variable costs on breached contract) + (variable costs actually incurred) - (additional revenues from salvage).

90. 16 U.C.C. REP. SERV. 101 (S.D.N.Y. 1974).

91. The figures have been simplified slightly to reduce the complexity of the illustration.

estimated average profits for all units produced. More important, when marginal costs are increasing, the breach would generate "hidden" savings on other units produced by Amax. The conventional profit measurement the court used in *American Metal* fails to identify these savings explicitly. Rather, a buyer such as Essex is only credited with net savings on contract units sold on the spot market in an effort to salvage the breached contract. In order to evaluate the efficiency of standard profit measures, we develop below a model in a costless environment to identify true losses sustained by sellers facing these conditions.

### B. *A Model for Efficient Measurement of Lost Profits*

The conditions supporting a decision to salvage a contract for specialized goods do not generally exist in competitive markets. The production of specialized goods for which few buyers exist at any price is the most common reason for a decision to salvage a breached contract. Sellers who salvage such special-order goods commonly possess market power. These sellers may or may not also have increasing marginal production costs.<sup>92</sup> The model developed below explores the implications of these assumptions.

#### 1. *Establishing true losses by marginal costs.*

Although not identical in its factual assumptions, Figure 3 is drawn to illustrate the general class of cases represented by the Amax-Essex contract. Assume now that Amax has special-order contracts with Essex to supply 225 million pounds of aluminum rods at \$.35/pound. Amax also sells aluminum T-ingots to others on the spot market. The seller has market power and increasing marginal costs. As Figures 3A and 3B are drawn, variable costs for the base raw material begin at 15.5 cents for the first unit produced and increase on later units sold.<sup>93</sup>

Figure 3A depicts Amax's production after concluding its contract with Essex. The Essex contract is a fixed obligation. In addition, Amax will sell other aluminum products on the open market at

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92. We cannot generalize, however, because the technological conditions that increase marginal costs do not have any predictable relationship to the business categories frequently discussed in legal commentaries, such as special-order producers and makers of standardized goods. Marginal costs are most likely to increase when important productive inputs are relatively fixed and not subject to easy adjustment as output increases. Cost conditions must be determined rather than presumed.

93. Conditions such as limited inventory capacity, increasing labor costs, and limited equipment capacity explain increasing marginal costs.



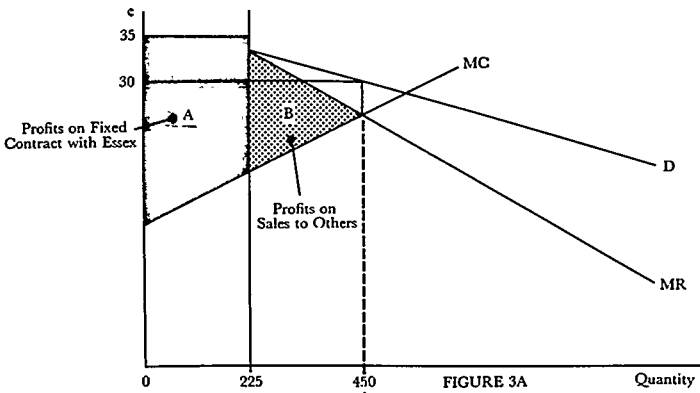


FIGURE 3A

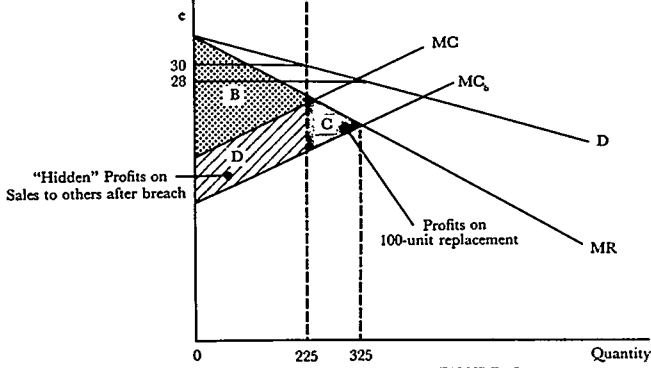


FIGURE 3B

the profit-maximizing intersection of its marginal revenues and marginal costs.<sup>94</sup> In Figure 3A the noncontractual output is 225 million pounds, and total aluminum sales are 450 million pounds. The true expected profit on the Essex contract is represented in Figure 3A by the shaded area A between marginal revenues and marginal costs. The shaded area B represents the expected profit on noncontractual sales.<sup>95</sup>

Cost savings produced by the breach are the second component of a lost-profits award. Figure 3B reflects the changed circumstances produced by the Essex breach. Amax still projects the *same* spot mar-

94. As shown in Figures 3A and 3B, spot buyers may not value the first unit produced in the spot market as highly as the contract buyer values the last unit produced under the special-order contract. This difference in value could be due to a change in conditions following the completion of the contract or to some special value attached to contractual agreements for production.

95. Expected profit from noncontractual sales is representable alternatively as the area between the price and the marginal cost curve or the area between the marginal revenue and marginal cost curves. Shaded area B, which corresponds to the latter alternative, is used to represent the expected profit for noncontractual sales in Figures 3A and 3B.

ket demand curve and, by definition, the same marginal revenue curve. Unlike the volume seller whose demand curve shifts rightward when the risk of buyer resale is eliminated, the salvage seller does not face a shift in its demand curve because there is no alternative market for the goods.<sup>96</sup> However, the seller's marginal cost curve (MC) has changed significantly. The breach has relieved Amax of the responsibility of producing the 225 million pounds of aluminum rods under fixed contract to Essex, thereby enabling Amax to produce noncontractual units in the lower section of the marginal cost curve. Because the relevant range of the marginal cost curve for Amax's output decision has changed,<sup>97</sup> the marginal cost curve appears to have shifted to the right from MC to MC<sub>b</sub>. What are the implications of this shift in marginal costs? Had the breach not occurred, Amax would have sold 225 million pounds of T-ingots to others. Because the firm's marginal costs are increasing, the breach relieves Amax of the increasing costs previously incurred in producing contractual units. The marginal cost curve for other units of production is therefore lower than if Essex had performed.

Excess profitable capacity is the most visible effect of this change in costs. If Amax produced only 225 million units after breach, its marginal costs would be less than marginal revenues. Therefore, Amax will be willing to lower price on T-ingots to \$.28 and produce an additional 100 million T-ingots so that marginal costs equal marginal revenues. As the court in *American Metal* properly concluded, this adjustment to new opportunities is a salvage of profitable capacity that mitigates the losses produced by the breach. Therefore, the savings represented by profits earned on new sales (as represented by the shaded area C in Figure 3B) must offset the lost profits claimed on the breached contract.<sup>98</sup>

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96. Since, by definition, there is no established resale market for the contract goods, the seller does not discount its estimation of the market for sales of related products by the possibility that the buyer will resell in its market. There is no risk that the buyer will resell and deprive the seller of a sale it would otherwise have made. Thus, the breach does not permit the seller to increase its market for additional sales and has no effect on the demand curve in Figure 3A.

Although the assumption of no resale market is true by hypothesis, it seems implausible that the contract goods are not substitutes at any price for the related products sold to others. In some circumstances the legal conclusion of "no available market" will not be supported precisely by unchanged demand for the seller's related products. We assume, nevertheless, that the costs of identifying small shifts in demand exceed any gains in accurate damage measurement.

97. See note 41 *supra*.

98. Part of the profits from the new units produced after the breach must be reattributed to old units made less profitable by the price reduction caused by the post-breach in-

The change in costs also generates additional profits on T-ingot sales projected before the breach. The breach reduces projected marginal costs on these units and increases their profitability (as represented by the shaded area D in Figure 3B). These additional breach-related profits are not accompanied by any observable adjustment by the seller to the changed conditions. In order to mirror true losses, however, seller's damages must further be reduced by these "hidden" cost savings on those other units whose production was projected prior to breach.

In sum, savings attributable to the breach are not limited to profits on new sales. Before a breach, a seller facing increasing marginal costs would presumably devote some of its most efficient productive capacity to the broken contract.<sup>99</sup> By releasing some of this capacity, the breach produces cost savings for other productive uses. The seller will sell to some additional buyers to whom it would not have sold in the absence of breach. In addition, this post-breach adjustment will result in savings through increased profits on sales from pre-breach capacity.<sup>100</sup> Measuring lost profits by marginal costs permits identification of the units affected by breach and accurate measurement of the corresponding losses and savings. The relationship of average cost data (such as that apparently used by the *American Metal* court) to profits earned on any specific units of production only approximates true losses. Nevertheless, as we suggest below, the increased accuracy of marginal cost measurement may be offset in many cases by the additional costs of obtaining the information.

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crease in output. After subtracting these profits, the new profit on the additional units produced is the shaded area C, the area between the marginal revenue and marginal cost curves. This is true because the marginal revenue curve reflects the effect of the necessary price cuts as additional sales are made.

99. Although the representation in the Figures may seem to suggest that the contractual units are produced "first," this is a decisionmaking priority rather than a temporal one. In decisions about output expansion, the order of consideration is determined by the profitability of the units. Under the factual conditions of the seller's breach, the per-unit revenues in the contractual units are higher than market price, so that the decisionmaking margin of the "lost" units produced (the least profitable or break-even units) always falls in the noncontractual market.

100. How are true losses measured where the seller's marginal costs are constant over the relevant range of output? As Figures 2A<sub>1</sub> and 2A<sub>2</sub> illustrate, producing at a lower level of output makes no difference if the marginal cost curve is horizontal. These cost conditions can exist for a monopolist even though its marginal revenue curve is declining. When the seller with market power is producing at constant marginal costs, no adjustment will be made for a breach. The seller will produce the same quantity of goods as it projected before the breach.

Further, because the seller is not producing under diseconomies of scale, the breach will not generate any changes in cost conditions for the seller. Since this seller's marginal costs are equal to its average variable costs, damages are accurately measured by the contract price less the estimated unit cost of producing additional goods.

## 2. *Estimating loss by average costs: a litigation model.*

The preceding analysis shows that using average cost data to measure lost profits is inaccurate when marginal costs are increasing. This distortion is offset to some extent by parallel mismeasurement of savings. For example, the court in *American Metal* apparently used average cost information when crediting the buyer with salvage profits of \$14 million. These "average" savings were then deducted from the "average" lost profits to produce the \$4 million damage award. This offsetting effect suggests that average costs may only minimally distort the true losses produced by the breach. However, the relationship between average-cost data depends in the first instance on what units of production are used to calculate the average. For example, the *American Metal* court used a figure of \$.16 average cost to establish the savings produced by the breach. If this figure represented the average variable costs of all replacement units produced, it would approximate the true savings on both the existing and breach-created production. But, if the figure was based on the projected average variable cost to produce the pre-breach output of T-ingots, the average cost data would fail to credit the buyer with the "hidden" savings produced by the breach-induced shift in marginal costs.

Despite the greater accuracy of using marginal cost data, its use would be inefficient where the reduction in error is purchased by an even greater increase in litigation costs. Whether marginal cost data are more expensive to determine than average cost information depends upon the types of production data the seller has available, which in turn is governed by the firm's need for various cost accounting information. For example, average cost is typically used in an estimate or standard costs accounting system.<sup>101</sup> This system is often used by sellers who want to identify the costs of specific production orders in order to control and compare total costs.<sup>102</sup> However, if the firm has increasing production costs, it will also need to determine profit-maximizing output and price. Such data are found through a

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101. Estimate and standard costs are predetermined costs based on past experience. Thus, standard costs are frequently defined as "scientifically determined costs, often representing a considered judgment of what the cost should be under good performance." C. GILLESPIE, *COST ACCOUNTING AND CONTROL* 377 (1957). See also *id.* at 377-92, 402-21.

102. An estimate or standard costs accounting system is often used in conjunction with "job order" costing by sellers in order to control the costs of specific, identifiable production orders. *Id.* at 13, 46-62. The other basic type of cost-control system, process costing, also uses average costs as a means of production control. Process costing accumulates costs and production units period by period; cost per unit of goods is determined as an average unit cost for the period. *Id.* at 14, 308-34.

system of direct cost accounting which distinguishes manufacturing costs that are fixed from those that vary with volume.<sup>103</sup> The marginal costing mechanism used in a direct cost accounting system can help determine accurate lost-profits measurements.<sup>104</sup>

Since sellers use different accounting systems for different purposes, we cannot predict which sellers will have access to marginal cost data after the buyer's breach. Nevertheless, a legal damages rule will operate efficiently if legal presumptions induce investment in additional accuracy when the expected gain to the litigant exceeds the additional expenditure. Initially, the seller's evidence must justify an inference that unfinished production would have generated profits;<sup>105</sup> a prima facie case requires proving the revenues lost by the breach less any savings in cost. Lost revenues are equal to the difference between the contract price for the breached units and the gross receipts of any salvage. Changes in cost require more complex production data. Typically, the seller will separate variable and fixed costs

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103. In direct costing, unlike conventional or "absorption" costing, only the variable manufacturing costs are regarded as production costs. Fixed production costs are treated as period costs and immediately released as an expense. See 1 C. HORNGREN & J. LEER, CPA: PROBLEMS AND APPROACHES TO SOLUTIONS 114 (4th ed. 1974).

104. The most important use of marginal cost data is to enable managers to determine profit-maximizing output and price. In addition to "cost-volume-profit" relationships, marginal costing aids other common managerial decisions. For example, what prices should be quoted on special orders? Should the company manufacture components internally or acquire them on the market? See C. GILLESPIE, *supra* note 101, at 652-60; Childres & Burgess, *supra* note 7. However, to determine the profit-maximizing point the seller need only determine the portion of its MC and MR curves near its estimate of the profit-maximizing point. If the seller can estimate the range in which its profit-maximizing point might lie, only a segment of the MC curve will be analyzed with care.

Direct cost accounting will provide a proper basis by which the seller's true unit costs can be estimated. The proof of these costs will come from past records, estimates, and expert testimony—particularly cost accountants. Courts, however, have never had difficulty admitting these kinds of proof as relevant and, where uncontroverted, dispositive. See, e.g., *Western Union Tel. Co. v. R.J. Jones & Sons*, 211 F.2d 479 (5th Cir. 1954); *Smith v. Onyx Oil & Chem. Co.*, 120 F. Supp. 674 (D. Del. 1954), *vacated and remanded*, 218 F.2d 104 (3d Cir. 1955); *Betterman v. American Stores Co.*, 367 Pa. 193, 80 A.2d 66 (1951).

105. Traditionally, the seller has been required to establish two inferences in order to make out a prima facie case of lost profits. First, the seller must establish that if the contract had been performed it would have earned a net profit—that its estimated costs of production were less than the contract price. See, e.g., *Hinckley v. Pittsburgh Bessemer Steel Co.*, 121 U.S. 264 (1887); *Tuttle v. Bootes Hatcheries & Packing Co.*, 112 F. Supp. 705 (D. Minn. 1953); *Haddad v. Western Contracting Co.*, 76 F. Supp. 987 (N.D.W. Va. 1948). Second the seller must establish that it could not mitigate damages by using the capacity the breach released. See, e.g., *Hinckley v. Pittsburgh Bessemer Steel Co.*, 121 U.S. 264 (1887); *Hugo v. Loewi, Inc. v. Geschwill*, 186 F.2d 849 (9th Cir.), *cert. denied*, 342 U.S. 817 (1951).

Many pre-Code courts helped the seller overcome this mitigation burden by presuming that market conditions made mitigation impossible. See, e.g., *Mount Pleasant Stable Co. v. Steinberg*, 238 Mass. 567, 131 N.E. 295 (1921); *Oswego Falls Pulp & Paper Co. v. Stecker Lithographic Co.*, 215 N.Y. 98, 109 N.E. 92 (1915).

in establishing losses, because courts deduct from the award any variable costs saved by the breach. Since sellers using certain types of accounting systems may not know their marginal costs, introducing average variable costs efficiently establishes a prima facie case of lost profits. This figure will roughly approximate the amount of true savings due to the shift in marginal costs.<sup>106</sup> Where the error costs of using average profits to measure both estimated losses and savings exceed the cost of more refined production data, one of the litigants will be induced to purchase greater accuracy through more precise calculation of the seller's marginal costs. Thus, the incentive to reduce the seller's damage claim will encourage the buyer to invest resources in establishing the existence and rate of the seller's increasing marginal costs.<sup>107</sup>

This section has suggested a litigation model determining lost profits for salvaging sellers who lack a replacement market for the finished goods. The central presumptions of this litigation model are rooted in common law damage cases. Courts traditionally have viewed approximate losses, based on average costs or other rough estimates, as sufficient to establish the prima facie case for recovery of profits lost by breach.<sup>108</sup> Courts have also imposed on the salvaging

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106. Where the buyer introduces evidence supporting an inference of released capacity, mitigation incentives are retained by a legal presumption that some savings were produced by the breach. Establishing the precise amount of savings, however, may not be cost-justified. A presumption that the breach produced savings equal to the seller's average unit profit multiplied by the potential output released by the breach will roughly approximate true savings based on the shift in marginal costs.

107. This evidence will support two inferences: (1) The true profits on the breached units will be less than the average profits on all units of production; and (2) the breach will produce savings by reducing the actual costs of other units of production, thus increasing the profitable capacity to pursue additional sales.

Ready access to the seller's cost data through discovery makes possible such an investigation by the buyer, especially in cases like *American Metal Climax*, in which the damage liability is substantial. Increasingly, courts have accepted records of past operations and prices, and current market reports, as a basis for expert testimony on future demand and cost schedules. See, e.g., *Chain Belt Co. v. United States*, 115 F. Supp. 701 (Ct. Cl. 1953); *Friedman Iron & Supply Co. v. J.B. Beard Co.*, 222 La. 627, 63 So. 2d 144 (1952). In addition, advances in cost accounting procedures permit drawing reasonable inferences from expert testimony about the direction of a firm's marginal production costs. Several recent cases illustrate buyer's efforts to reduce seller's average cost estimates by arguing that marginal costs are increasing. See, e.g., *Timber Access Indus. Co. v. U.S. Plywood-Champion Papers, Inc.*, 263 Or. 509, 503 P.2d 482 (1972).

108. See, e.g., *Hinckley v. Pittsburgh Bessemer Steel Co.*, 121 U.S. 264, 272-78 (1887); *Tucson Fed. Sav. & Loan Ass'n v. Aetna Inv. Corp.*, 74 Ariz. 163, 172-73, 245 P.2d 423, 429-30 (1952); *Allen, Heaton & McDonald, Inc. v. Castle Farm Amusement Co.*, 151 Ohio St. 522, 86 N.E.2d 782 (1949). But see *MacKenzie Laboratories, Inc. v. Lawrence*, 80 F. Supp. 710, 716 (D. Md. 1948); *Royal Store Fixture Co. v. Bucci*, 48 Pa. D. & C.2d 696, 701-03 (1969).

seller the burden of proving that time and capacity savings did not generate new profits.<sup>109</sup> If the seller failed to satisfy this burden, a number of common law courts reduced the damages awarded by the amount of fixed or overhead costs allocable to the released capacity.<sup>110</sup> These cases have been subsequently criticized as improperly including overhead as a cost "saved" by the breach.<sup>111</sup> Nevertheless, the assumption of increasing marginal costs suggests that the inexact presumptions of these early cases may well approximate true losses more accurately than lost-profits awards under U.C.C. § 2-708(2).<sup>112</sup>

### C. *Measuring Damages When There Are Multiple Breaches*

The preceding analysis illustrates the influence of increasing mar-

109. Pre-Code cases universally recognized that when the seller used raw materials and released capacity to perform other contracts after the breach, breach-related profits mitigated the damages. *E.g.*, *Hinckley v. Pittsburgh Bessemer Steel Co.*, 121 U.S. 264, 275 (1887) (citing the rule developed by the Court in *Philadelphia, W. & B.R.R. v. Howard*, 54 U.S. (13 How.) 331 (1851)); *Isaacs v. Terry & Tench Co.*, 125 A.D. 532, 109 N.Y.S. 792 (1908); *Johnston v. Pittsburg Marble & Granite Works*, 94 S.W.2d 831 (Tex. Civ. App. 1936); *see* RESTATEMENT OF CONTRACTS § 335 (1932).

In addition, many courts recognized that both mitigation and comparative advantage required imposing on sellers a burden of proving the savings produced by the breach. *See, e.g.*, *Gruber v. S-M News Co.*, 126 F. Supp. 442 (S.D.N.Y. 1954); *Apex Metal Stamping Co. v. Alexander & Sawyer, Inc.*, 48 N.J. Super. 476, 138 A.2d 568 (1958); *Allen, Heaton & McDonald, Inc. v. Castle Farm Amusement Co.*, 151 Ohio St. 522, 86 N.E.2d 782 (1949); *Schubert v. Midwest Broadcasting Co.*, 1 Wis. 2d 497, 85 N.W.2d 449 (1957).

110. *C.W. Rantoul Co. v. Claremont Paper Co.*, 196 F. 305 (1st Cir. 1912); *Columbus Mining Co. v. Ross*, 218 Ky. 98, 290 S.W. 1052 (1927); *Apex Metal Stamping Co. v. Alexander & Sawyer, Inc.*, 48 N.J. Super. 476, 138 A.2d 568 (1958); *Forest Prod. Co. v. Dant & Russell, Inc.*, 117 Or. 637, 244 P. 531 (1926).

111. *See, e.g.*, *R. NORDSTROM*, *supra* note 7, § 177 (1970); *Speidel & Clay*, *supra* note 7, at 694.

112. The damage cases litigated under § 2-708(2) involving salvaging sellers of special-order goods have not recognized that released capacity may make other work more profitable. Courts have generally permitted the seller to recover the difference between the contract price less the average variable costs of producing uncompleted items plus or minus the proceeds of salvaging incurred costs. *See, e.g.*, *City of Louisville v. Rockwell Mfg. Co.*, 482 F.2d 159 (6th Cir. 1973); *Holiday Mfg. Co. v. B.A.S.F. Systems, Inc.*, 380 F. Supp. 1096 (D. Neb. 1974); *Anchorage Centennial Dev. Co. v. Van Wormer & Rodrigues, Inc.*, 443 P.2d 596 (Alas. 1968); *Coast Indus. v. Noonan*, 4 Conn. Cir. Ct. 333, 231 A.2d 663 (1967); *American Metal Climax, Inc. v. Essex Int'l, Inc.*, 16 U.C.C. REP. SERV. 101 (S.D.N.Y. 1974); *Timber Access Indus. Co. v. U.S. Plywood-Champion Papers, Inc.*, 263 Or. 509, 503 P.2d 482 (1972); *Paramount Lithographic Plate Serv., Inc. v. Hughes Printing Co.*, 2 Pa. D. & C.3d 677, *aff'd without opinion*, 377 A.2d 1001 (Super. Ct. 1977). Only in one or two cases is there any indication that the buyer challenged the seller's computation by urging the use of more sophisticated accounting data. *See Timber Access Indus. Co. v. U.S. Plywood-Champion Papers, Inc.*, 263 Or. 509, 503 P.2d 482 (1972) (buyer argued that increasing marginal costs would decrease amount of claimed profits); *American Metal Climax, Inc. v. Essex Int'l, Inc.*, 16 U.C.C. REP. SERV. 101 (S.D.N.Y. 1974) (unspecified and unsuccessful challenge by buyer to sellers' cost accounting methods).

ginal costs on seller's aggregate losses. This section suggests that when there are two or more buyers of specialized goods, the proper allocation of damages depends on the sequence of breach. Accurately implementing the compensation principle requires allocating damages among breaching buyers in proportion to their contribution to the seller's losses. Figure 4 illustrates the conditions relevant to successive breaches by two buyers.

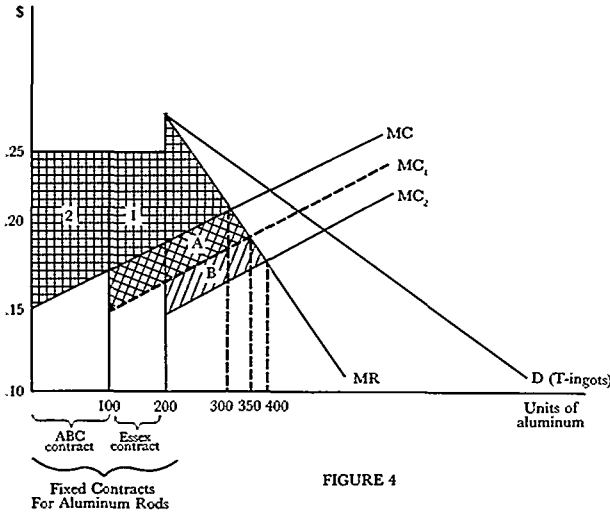


FIGURE 4

In interpreting Figure 4, assume that Amax contracts to supply 100 million pounds of special-order aluminum rods to both Essex and ABC at a fixed price of \$.25 per pound. In addition, Amax sells aluminum T-ingots on the spot market. Changed conditions making aluminum rods less attractive than substitute materials cause Essex to repudiate its contract to purchase aluminum rods. ABC subsequently breaches as well.

Figure 4 first suggests that where the seller's marginal costs are increasing, the true losses attributable to each breach are not equivalent. The first breach by Essex reduces the seller's production of units of aluminum from 200 to 100 million. The lost profit for those units, represented by shaded area 1, is the difference between revenues and marginal costs for those 100 million units. When ABC, the second contract buyer, breaches—even if only seconds later—its breach will produce larger losses, as represented by shaded area 2. The loss is smaller in the first instance because increasing costs make producing units for Essex more expensive and the loss of that contract less significant. The second breach, by contrast, causes the



seller to lose profits on the initial units<sup>113</sup> of production, thus reducing expected profits.

Our analysis suggests that the anticipated profits lost when ABC breaches are greater than those lost due to Essex's breach. In addition, the cost savings from new capacity released by the breaches are not equally distributed. As Figure 4 is drawn, Amax responds efficiently to the new profitable capacity produced by the shift in increasing marginal costs. After both contracts are repudiated, the seller expands its sales of T-ingots by 100 million pounds beyond pre-breach estimates so that marginal cost will equal marginal revenue. Against which breach should the cost savings be offset? As Figure 4 reveals, the savings are not distributed in equal amounts.

The first breach by Essex changes the relevant marginal cost curve for sales to others from MC to MC<sub>1</sub>, making possible increased profits on other units sold and on new sales. These increased profits are represented by shaded area A. The second breach changes the relevant marginal cost curve from MC<sub>1</sub> to MC<sub>2</sub>, creating the smaller amount of savings represented by the shaded area B. Examining the allocation of savings reveals that the initial breach generated greater salvage opportunities. Increasing marginal costs also explain this unequal distribution of savings. Since the seller's costs are rising, its ability to offset a second breach with savings on new opportunities is less than the offset attributable to the initial breach.

The preceding analysis suggests that the first breach causes fewer losses and permits greater cost savings, while the second breach generates greater losses offset by smaller cost savings. Since the first breach operates in the middle range of costs, it has less impact on cost savings and lost profits. The second breach, however, affects the seller at an extreme where losses are more pronounced and gains more dear.

Our analysis of multiple breach when the seller's marginal costs are increasing demonstrates that the true losses attributable to the second breach are measurably greater than those caused by the first.<sup>114</sup> What are the legal implications of this observation? All

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113. See note 99 *supra*.

114. The greater effects of subsequent breach are always premised on the assumption of increasing marginal costs. If the second breacher can establish that marginal costs were relatively constant over the relevant range of output, the "average out" method of attributing loss would be accurate. In fact, it is theoretically possible (in the case where the seller has market power) that marginal costs may be falling at the time of the second breach. Here, the subsequent damages would be lower than the initial loss caused by the first breach. The lack of apparent real world applications of this proposition, however, suggests its factual implausibility.

things equal, a damage rule that treats the breaches equally results in inefficient behavior of both buyers. The first breacher, required to pay more than its share of losses, is induced (absent renegotiation) to perform an inefficient contract and forego welfare-enhancing gains from alternative uses. In addition, a legal rule that treats the damages as equivalent insufficiently restrains the second breach by not requiring damages for the full losses caused by that breach.

A basic justification for retaining the rule of equal damages per unit of goods breached is that the costs of measuring lost profits can be significant when the seller's marginal costs are increasing. Accurately attributing losses to sequential breachers would require an even greater expenditure. The same considerations that argue for permitting the seller to use average cost data to establish lost profits also favor a legal rule initially presuming equivalent costs over the range of breaches.

Assume, however, that the first breacher voluntarily bears the expense of more accurately allocating the losses in order to reduce its damages. What are the consequences of allowing the buyer to rebut the equivalent damages presumption and apportion its losses according to the sequence of breach? It might be argued that buyers, unable to foresee fully the consequences of breach, would not be able to make accurate decisions about whether to breach. Uncertainty about the costs of a breach may prevent efficient results. At a minimum, uncertainty may require costly renegotiation of the initial contractual assignment of risks.

But requiring that damages always be averaged among the several breachers will also be costly whenever a seller has increasing marginal costs. Under an average damages rule, subsequent breachers shift some of the losses they cause to earlier breaches. A rule which exposes a buyer to the possibility that its damages will be greater if someone else has breached will promote efficiency by inducing the buyer to examine this possibility before it decides to breach.

Admittedly, precise marginal cost data may be unavailable in most cases within the "crisis" period of the breach decision. However, the same uncertainty exists in cases of single breaches. The only additional variable is the possibility of several breachers. A rule asking  $B_2$  to consider whether  $B_1$  has already breached enhances efficiency when the information costs to  $B_2$  are smaller than the savings realized from increased accuracy in estimating the effects of a breach. Allowing the presumption of equivalent damages to be rebutted by

evidence of the relative impact of sequential breaches will increase the certainty of damage liability for initial breachers. For example, under the "average-out" rule, the first breacher observes its damages increasing as successive breaches occur. It will not know its total damages until all breaches have occurred. However, where cost data can be used to apportion losses, each breacher can estimate its liability at any point. All things equal, increasing the certainty of liability will increase settlement rates while reducing costs of litigation and delay.<sup>115</sup>

Thus, legal presumptions analogous to those developed in the litigation model efficiently apportion losses for multiple breaches. Initial presumptions based on average cost data would produce an equivalent rate of damages for sequential breaches. But if the expected gains from reducing liability induce an expenditure in accurate measurement by an initial breacher, the legal rule enhances efficiency by apportioning losses with the marginal cost data that this investment reveals.

### III. CONCLUSION

Traditionally, the common law had declared a clear preference for a contract-market formula when measuring a seller's damages for breach of contract. The U.C.C. damages scheme reflects this preference for market damages, but a concern that the common law failed to accurately measure certain sellers' true losses prompted the undiscriminating lost-profits mechanism in U.C.C. § 2-708(2).<sup>116</sup> Abandoning the test of marketability of the contract goods substantially blurred the distinction between market and estimated profit measures. The current statutory language authorizing the recovery of lost profits is unspecific, and gratuitous economic assumptions have flawed attempts to define its scope. Freed from the "available market" restraint of the pre-Code rule, recent cases and commentary have encouraged use of the estimated profit mechanism to measure

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115. A theory of efficient breach is more rigorously explored in Goetz & Scott, *supra* note 1, at 562-68.

116. During bargaining there may be little incentive for the seller to give a potential breacher accurate information concerning its marginal costs and relative position in the breaching sequence. For example, if costs to the seller will be lower when the buyer performs then it might seem to have an incentive to encourage the buyer not to breach. But this argument neglects the seller's mitigation responsibilities and presupposes its incentives. The seller cannot recover any damages that could have been avoided had it disclosed what it knew about the consequences of breach. Furthermore, the only information the seller will disclose is information that may potentially *increase* a given buyer's damages. By not revealing that  $B_2$  is a second breacher, the seller would be inducing rather than discouraging breach. Thus, if systematic undercompensation causes sellers to prefer performance, accurate disclosure would induce the desired behavior.

losses for "lost-volume" and "components" sellers.

This article argues that the concern for reducing measurement errors which prompted this increase in lost-profits recoveries is misguided. Careful analysis reveals that neither the "lost-volume" nor "components" category accurately identifies those cases where compensation requires a departure from a market-contract formula. In both cases the existence of a market implies that the seller may be able to transform internal production costs into an available post-breach market opportunity. If the breached contract is replaceable by reselling the breached goods on the market, the difference between that market price and the contract price will accurately mirror true losses. Although market imperfections will produce a divergence between market damages and true losses in specific cases, assessing these claims individually requires relatively sophisticated and frequently inaccessible market and production data. We have therefore argued that an initial presumption of replacement efficiently minimizes total enforcement costs whenever sellers have access to a market.

Lost-profit measures are useful for specialized contracts when the seller responds to the breach by salvaging incomplete performance. Here economic analysis suggests that true losses are often smaller than conventionally measured damage awards. Nevertheless, because measuring estimated profits accurately is costly, reducing error by introducing more accurate marginal cost data will frequently increase the cost of litigation. While legal presumptions can reduce this cost, evidence strongly suggests that the traditional common law rules for measuring seller's damages represent an efficient solution to the lost-profits puzzle.<sup>117</sup>

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117. A separate argument against allowing the sequence of breach to be relevant in damage measurement is the ability of the seller to control the breach sequence in some circumstances—particularly anticipatory repudiations by the buyer. Under U.C.C. § 2-610, for example, when a buyer anticipatorily repudiates its contract, the seller has a choice of accepting the breach or awaiting performance within "a commercially reasonable time." Assume, for example, that  $B_1$  breaches its contract. The seller may—or may not—await performance for a reasonable time. In that period  $B_2$  and  $B_3$  may—or may not—breach. The sequence of breach could affect the cost of  $B_1$ 's decision. The seller can justifiably wait only when it believes that the buyer may retract its repudiation shortly. But if  $B_1$ 's breach is unequivocal, the seller's "reasonable time" expires concurrently with the breach. In any event,  $B_1$ 's damages should be based on the market price at or near the date of repudiation of a contract for future delivery. See Jackson, *supra* note 12.

In short, the seller has only a limited ability to control the sequence of breach when a buyer repudiates before the date of performance. The ability to assess  $B_1$ 's larger damages based on its ultimate position as a second breacher would exist, even theoretically, only when  $B_1$ 's repudiation was equivocal. In that case it may be perfectly appropriate for  $B_1$  to consider more carefully the consequences of an "uncertain" repudiation.