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Optimal Class Size, Opt-Out Rights, and "Indivisible" Remedies

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INTRODUCTION

The American Law Institute's ("ALI") *Principles of the Law of Aggregate Litigation* ("*Principles*")[1] have set a standard against which the future analysis of class actions and other aggregation mechanisms will be measured. Among the *Principles*' many accomplishments is the creation of a vocabulary that both describes and stimulates analysis of major aggregation issues that the American civil justice system faces. One of the most enduring and nettlesome of these issues is the right of class members to opt out of a class action—an issue that is caught up in the more general question of the optimal size of aggregation. The majority of class actions are opt-out class actions, in which class members can leave the class, rather than mandatory class actions, in which class members cannot exclude themselves.[2] As a rule of thumb, to which several important exceptions exist, class actions that principally seek monetary relief are opt-out class actions, while class actions that principally seek injunctive relief are mandatory.[3]

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1 PRINCIPLES OF THE LAW OF AGGREGATE LITIG. (2010).

2 *See* THOMAS E. WILLGING ET AL., FED. JUDICIAL CTR., EMPIRICAL STUDY OF CLASS ACTIONS IN FOUR FEDERAL DISTRICT COURTS: FINAL REPORT TO THE ADVISORY COMMITTEE ON CIVIL RULES 21 (1996) (reporting data that sixty-one percent of class actions were opt-out class actions and thirty-nine percent were mandatory class actions).

3 The first exception to this rule is the limited-fund class action brought under Rule 23(b)(1)(B) or equivalent state-law counterparts. *See* FED. R. CIV. P. 23(b)(1)(B). In limited-fund class actions, a court distributes proceeds from a fund insufficient to satisfy all class members. *See* Ortiz v. Fibreboard Corp., 527 U.S. 815, 834–35 (1999). In dicta, the Supreme Court has indicated that, under proper conditions, Rule 23(b)(1)(B) allows limited-fund class actions to be maintained on a mandatory basis. *Id.* at 838–41. Second, some courts permit the award of "incidental" monetary relief in mandatory class actions brought under Rule 23(b)(2). *See* FED. R. CIV. P. 23(b)(2). *Compare* Allison v. Citgo Petrol. Corp., 151 F.3d 402, 425–26 (5th Cir. 1998) (restricting incidental relief to awards given on a classwide basis), *with* Robinson v. Metro-N. Commuter R.R., 267 F.3d 147, 164 (2d Cir. 2001) (permitting more individualized monetary relief), *and* Dukes v. Wal-Mart Stores, Inc., 603 F.3d 571, 622 (9th Cir.) (en banc) (holding that individualized backpay awards are available under Rule 23(b)(2), but remanding for a "comprehensive analysis" regarding whether an award of punitive damages would make monetary dam-

The right to opt out has a constitutional basis of uncertain breadth, but, at a minimum, seems to require an opt-out right for some class members in many class actions that seek monetary relief.[4]

The distinction between mandatory (or injunctive) and opt-out (or monetary) class actions has an historical explanation,[5] but its theoretical foundation is weaker. Not surprisingly, therefore, the right to opt out has received trenchant criticism[6] and has also engendered cre-

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ages predominate), *cert. granted*, 79 U.S.L.W. 3128 (U.S. Dec. 6, 2010) (No. 10-277). Third, courts sometimes allow parties to opt out of a mandatory class action. *Compare* Cnty. of Suffolk v. Long Island Lighting Co., 907 F.2d 1295, 1304–05 (2d Cir. 1990) (permitting plaintiff to opt out of a limited-fund class action), *with* Thomas v. Albright, 139 F.3d 227, 235 (D.C. Cir. 1998) (holding that the district court abused its discretion in permitting plaintiffs to opt out).

4 *See* Phillips Petrol. Co. v. Shutts, 472 U.S. 797, 812 (1985) (holding that the Due Process Clause requires that class members without minimum contacts with the forum state be given the right to opt out of a state-court class action seeking damages); *id.* at 811 n.3 (limiting the holding to "class actions which seek to bind known plaintiffs concerning judgments wholly or predominately for money damages"). The reach of *Shutts* has spawned much uncertainty. Among the questions are its applicability in federal-court class actions, its applicability to limited-fund class actions that involve monetary awards but are usually treated as mandatory under Rule 23(b)(1)(B) (or state-law equivalents), and its applicability to class actions under Rule 23(b)(2) (or state-law equivalents), for which monetary relief is an "incidental" aspect of injunctive relief. *See Ortiz*, 527 U.S. at 846–48 (raising in dicta the possible applicability of *Shutts* to mandatory limited-fund class actions); JAY TIDMARSH & ROGER H. TRANGSRUD, MODERN COMPLEX LITIGATION 286–90, 419–24 (2d ed. 2010) (discussing ambiguities in *Shutts*).

5 Based on earlier antecedents, such as the bill of peace, the modern class action developed in equity as a mandatory device. As a general matter, equity had no authority to award damages; hence, the ideas of "mandatoriness" and injunctive relief traveled together. The opt-out class action is a more recent device, built in 1966 on the foundation of the "spurious class action," in which litigants seeking vindication of a "several" but "common" right could opt into the class and (according to some courts) were also able to take subsequent advantage of a favorable outcome in the case even if they did not opt in. Because "several" rights usually involved claims for money, the ideas of opting out and monetary relief also traveled together. On the history of the class action, see generally STEPHEN C. YEAZELL, FROM MEDIEVAL GROUP LITIGATION TO THE MODERN CLASS ACTION (1987) (describing the emergence of the modern class action from medieval roots); Zechariah Chafee, Jr., *Bills of Peace with Multiple Parties*, 45 HARV. L. REV. 1297 (1932) (discussing the origins of bills of peace). On the development of the more innovative opt-out class action from the concept of the spurious class action, see generally 7A CHARLES ALAN WRIGHT ET AL., FEDERAL PRACTICE AND PROCEDURE §§ 1752–1753 (3d ed. 2005); Benjamin Kaplan, *Continuing Work of the Civil Committee: 1966 Amendments of the Federal Rules of Civil Procedure (I)*, 81 HARV. L. REV. 356, 375–400 (1967). *See also generally* Debra Lyn Bassett, *Just Go Away: Representation, Due Process, and Preclusion in Class Actions*, 2009 BYU L. REV. 1079 (providing a brief history of the precursors to Rule 23); David Marcus, *Flawed but Noble: Desegregation Litigation and Its Implications for the Modern Class Action*, 63 FLA. L. REV. (forthcoming 2011) (discussing the history of the Rule 23(b)(2) class action).

6 *See generally, e.g.*, David Rosenberg, *Class Actions for Mass Torts: Doing Individual Justice by Collective Means*, 62 IND. L.J. 561 (1987) (arguing for class actions in mass tort cases); David Rosenberg, *Mandatory-Litigation Class Action: The Only Option for Mass Tort Cases*, 115 HARV. L. REV. 831 (2002) (arguing for mandatory-litigation class actions and critiquing "put option" class actions).

ative lawyerly efforts to convert class actions principally seeking money into mandatory ones.[7] Even though empirical and anecdotal evidence suggests that few class members opt out even when they have the opportunity to do so[8]—and when they do opt out, their decisions are often strategic rather principled[9]—finding a satisfying normative account of the opt-out right and its proper limits remains a work in progress.[10]

The *Principles* provide a better foundation for distinguishing mandatory from opt-out class actions. According to section 2.04(c), the nature of the remedy determines the mandatory or opt-out nature of a class action.[11] But the *Principles* do not reduce the nature-of-the-remedy inquiry to the simplistic historical distinction between injunctions and damages. Rather, they treat the remedial question functionally. If the remedy sought by the class representative is "indivisible," then an opt-out right is not required.[12] Conversely, if the class representative's remedy is "divisible," then class members enjoy an opt-out

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7 *Compare In re* Telectronics Pacing Sys., Inc., 172 F.R.D. 271, 284–86 (S.D. Ohio 1997) (certifying a medical-monitoring class action under Rules 23(b)(1)(A) and (B)), *and* Day v. NLO, Inc., 144 F.R.D. 330, 335–36 (S.D. Ohio 1992) (certifying a medical-monitoring class action under Rule 23(b)(2)), *with In re* St. Jude Med., Inc., 425 F.3d 1116, 1121–23 (8th Cir. 2005) (reversing class certification of a medical-monitoring class action under Rule 23(b)(2)).

8 *See* WILLGING ET AL., *supra* note 2, at 52–53 (reporting that the median percentage of opt-outs was 0.1% to 0.2% of the class membership and noting a few cases in which significant numbers of plaintiffs opted out); *see also* JAY TIDMARSH, FED. JUDICIAL CTR., MASS TORT SETTLEMENT CLASS ACTIONS: FIVE CASE STUDIES 10–11 (1998) (noting opt-out percentages of 2% and 8% in two mass tort settlement class actions and further noting significant numbers of opt-outs in other mass tort settlement class actions, but failing to provide exact percentages due to uncertainty about the size of the class membership).

9 Parties who opt out can sometimes extract larger payments than they could have from remaining in the class action. *See* TIDMARSH, *supra* note 8, at 39 (reporting that the 259 plaintiffs who opted out of a mass tort class action settlement received significantly more in subsequent settlements than they would have in the class action); Reed R. Kathrein, *Opt-Outs, MFNs and Game Theory: Can the High Multiples Achieved by Opt-Outs in Recent Mega-Fraud Settlements Continue, A Discussion Draft*, *in* SECURITIES LITIGATION & ENFORCEMENT INSTITUTE 2007, at 583, 587–90 (PLI Corporate Law & Practice, Course Handbook Ser. No. B-1620, 2007) (discussing numerous securities fraud cases in which opt-out institutional investors received settlement awards that were numerous multiples larger than the settlement awards received by class members).

10 For an important recent effort focusing especially on constructing settlements that reconcile the competing values of individual autonomy and global peace, see Richard A. Nagareda, *Autonomy, Peace, and Put Options in the Mass Tort Class Action*, 115 HARV. L. REV. 747, 751 n.8 (2002). *See also generally* Richard A. Nagareda, *The Preexistence Principle and the Structure of the Class Action*, 103 COLUM. L. REV. 149 (2003) (explaining the structural distinction between mandatory and opt-out rights by means of a principle that sees the proper scope of class actions to be the resolution of preexisting legal rights).

11 PRINCIPLES OF THE LAW OF AGGREGATE LITIG. § 2.04(c) (2010); *see also id.* § 2.07(c).

12 *Id.* § 2.04(c). With somewhat greater specificity, section 2.07(c) then provides that class

right.[13] What becomes crucial, therefore, is the definition of "indivisible remedies." According to the *Principles*, "indivisible remedies" are ones in which "the distribution of relief to any claimant as a practical matter determines the application or availability of the same remedy to other claimants."[14]

With one exception, this approach tracks existing law.[15] The formulation is also an important step forward. In grounding the ability (or inability) to opt out in the functional commonality of the remedy that class members obtain, section 2.04 connects the opt-out right to concerns for fairness, equality, and efficiency, rather than to ancient jurisdictional boundaries in the English courts.

This Article takes up the ALI's invitation to consider opt-out rights in terms of functionality, fairness, and efficiency, and provides a normative economic account of when opt-out rights should be afforded. As we demonstrate, the ALI's approach does not always track economic intuitions about when class members should be allowed to opt out of class actions. Part I specifies the assumptions on which our analysis is based. Using standard economic tools, especially marginal utility analysis, Part II describes how to determine the optimal size of a class action. In light of this analysis, Part III concludes that opting out of an optimally sized class action should not be permitted. Finally, Part IV relates the conclusions from the prior two Parts to critique the *Principles*' use of indivisible remedies as a test for

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members should not be afforded an opt-out right when a mandatory class is necessary "to manage indivisible relief fairly and efficiently." *Id.* § 2.07(c).

13 *Id.* § 2.04 cmt. a ("'[D]ivisible remedies' are claims typically handled under Rule 23(b)(3).").

14 *Id.* § 2.04(b).

15 The *Principles* countenance mandatory limited-fund class actions on somewhat more expansive terms than those permitted by the Court. *Compare* Ortiz v. Fibreboard Corp., 527 U.S. 815, 838–42 (1999) (presuming that mandatory class actions are only appropriate in limited-fund cases in which all plaintiffs proceed under the same legal theory), *with* PRINCIPLES OF THE LAW OF AGGREGATE LITIG. § 2.04 cmt. a (2010) (allowing mandatory class actions in limited-fund cases even if some plaintiffs also claim additional damages that warrant individualized treatment). At another point, however, the Reporters' Notes state that section 2.04 "is designed to explicate with greater precision the approach taken in recent years by courts under the auspices of Rules 23(b)(1)(A) and (b)(2)." *Id.* § 2.04 reporters' notes. Because limited-fund class actions are certified under Rule 23(b)(1)(B), not 23(b)(1)(A) or 23(b)(2), the Reporters' Notes imply that section 2.04 was not intended to deal with any monetary claims, including limited-fund claims. The Reporters make no attempt to reconcile this statement with Comment a, which had recognized that section 2.04 might be used to create mandatory class actions in limited-fund cases. In another arguable change to existing law, the *Principles* permit the award of individualized (and variable) incidental monetary relief to class members in a mandatory class action seeking an injunction—an issue on which some courts have taken a more restrictive position. *See supra* note 3; PRINCIPLES OF THE LAW OF AGGREGATE LITIG. § 2.04 cmt. b, illus. 5 (2010).

mandatory class treatment. We show that the "sameness," or the indivisibility, of the remedy does not correlate with the efficient use of mandatory class actions.

In developing this normative account about the optimal size of class aggregation and the circumstances in which class members should enjoy a right to opt out, we focus only on "small-stakes" or "negative value" cases—cases in which no class member has an incentive to bring a case on his or her own.[16]

I. BACKGROUND ASSUMPTIONS

We begin by assuming that n individuals compose the group N, which has been harmed by a single defendant. We further assume that N is a group large enough to satisfy the numerosity requirement for certifying a class action.[17] The harm that each potential plaintiff suffers is equal to H_i, where the subscript i refers to the ith individual.[18]

The following two Sections specify further assumptions that we make. In the first Section, we assume that an individual can take only one of two actions: sue the defendant individually or do nothing.[19] Individuals cannot cooperate. In the second Section, our strategy is to

16 *See infra* text accompanying note 23. On the idea of "small-stakes" or "negative value" suits, see generally Jonathon R. Macey & Geoffrey P. Miller, *The Plaintiffs' Attorney's Role in Class Action and Derivative Litigation: Economic Analysis and Recommendations for Reform*, 58 U. CHI. L. REV. 1 (1991). *See also* Amchem Prods., Inc. v. Windsor, 521 U.S. 591, 617 (1997) ("A class action solves [the] problem [of lack of incentive due to small recoveries] by aggregating the relatively paltry potential recoveries into something worth someone's (usually an attorney's) labor." (quoting Mace v. Van Ru Credit Corp., 109 F.3d 338, 344 (1997))); Castano v. Am. Tobacco Co., 84 F.3d 734, 748 (5th Cir. 1996) ("The most compelling rationale for finding superiority in a class action—the existence of a negative value suit—is missing in this case."); *In re* Rhone-Poulenc Rorer Inc., 51 F.3d 1293, 1299 (7th Cir. 1995) (Posner, J.) ("In most class actions—and those the ones in which the rationale for the procedure is most compelling—individual suits are infeasible because the claim of each class member is tiny relative to the expense of litigation.").

17 *See* FED. R. CIV. P. 23(a)(1) (requiring, as a condition of class certification, that the class be "so numerous that joinder of all members is impracticable").

18 We could extend the modeling to account for the amount of care that the defendant could have taken and consequently make the amount of harm a function of A, i.e., $H_i(A)$. For now, however, we are not worrying about the question of the optimal amount of care.

19 There are alternatives, including permissively joining with other plaintiffs, *see* FED. R. CIV. P. 20(a)(1), filing separately and consolidating with similarly situated plaintiffs, *see* 28 U.S.C. § 1407(a) (2006); FED. R. CIV. P. 42(a), and filing a competing class action; *see* Rhonda Wasserman, *Dueling Class Actions*, 80 B.U. L. REV. 461 (2000) (discussing the problems associated with the filing of class actions where membership and claims overlap). We recognize the importance of these alternatives in describing the "game" of how putative plaintiffs might be expected to behave in response to one plaintiff's filing of a class action. For our present purposes of describing the contours of an allocatively efficient opt-out right, however, we do not introduce this complication.

show the potential gains to plaintiffs of cooperating and acting collectively through a class action and then to specify the characteristics of the class action on which we base our subsequent analysis.

A. *Individual Actions—A Noncooperative Game*

Let RI_i equal the amount that the ith individual can recover through an individual action.[20] If we assume risk neutrality, then RI_i can be interpreted as the expected amount of i's recovery in an individual action. Next, let PI_i represent the probability that i will prevail in this action, and let EBI_i represent i's expected gross benefit of an individual action (i.e., $EBI_i = PI_i \times RI_i$). Next, let CI_i represent the expected cost of pursuing the case individually. Finally, let NBI_i represent the expected net benefit of an individual action (i.e., $EBI_i - CI_i$). Finally, we assume that i will choose to sue only if the expected net benefit from the lawsuit is greater than zero. Thus, i will sue only if $EBI_i - CI_i > 0$, or $EBI_i > CI_i$.[21] Otherwise, the individual will do nothing.[22]

Next, we assume that for no individual i does the expected net benefit of an individual action exceed zero—in other words, $CI_i > EBI_i$ for every individual i. This condition represents the classic negative-value situation that some courts have in recent years suggested is particularly suited to class action treatment.[23] Given these assumptions, no individual will file suit.

Next, we assume that plaintiffs cannot coordinate their activities or otherwise cooperate. Although a plaintiff who sues first might supply enough information to later plaintiffs to make it cost-effective for them to sue,[24] the first plaintiff cannot recapture the costs of the first

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20 In most cases, RI_i will be equal to the harm that the individual suffered (H_i), but, for purposes of generality, we leave RI_i unspecified.

21 We can also represent this assumption with two equivalent formulations: (1) $(PI_i \times RI_i) - CI_i > 0$, or (2) $NBI_i > 0$.

22 We assume that the plaintiff cannot find a lawyer to handle the case on a contingency basis. If the plaintiff can do so, a contingent-fee arrangement offloads some of the costs of an unsuccessful action onto the lawyer—a result that can affect the decision whether to sue. Our assumption that no lawyer will handle the case on a contingency seems warranted in most cases because the lack of net benefit to the plaintiff limits the fee award to the lawyer. In any event, finding such a lawyer does not affect the assumption that a plaintiff must obtain a net benefit i to bring suit. It affects only the point at which the putative plaintiff is willing to sue.

23 *See supra* note 16 and accompanying text.

24 For instance, if the first plaintiff prevailed, later plaintiffs might be able to use offensive collateral estoppel and eliminate their costs of proving the defendant's liability. *But see* Parklane Hosiery Co. v. Shore, 439 U.S. 322, 331–32 (1979) (stating that a court can deny issue-preclusive effect to a finding of liability when the plaintiffs in later cases could have joined the first case). The elimination of that cost might be sufficient to make the later plaintiffs' lawsuits worthwhile.

suit from these later-filing plaintiffs.[25] As a result, every plaintiff has an incentive to wait for someone else to sue first. This noncooperative game therefore has the following equilibrium: If no individual has a positive expected net benefit from suing individually, no one will sue.[26] Assuming that the plaintiffs' cases would have had a positive net benefit if they could have coordinated by aggregating their claims, the result is a prisoner's dilemma.[27]

B. Class Actions—A Cooperative Game

We now add assumptions that affect this initial equilibrium. Most significantly, we assume that the law permits one member of N (the "class representative")[28] to create a class action of size G, where G is less than or equal to N ($G \leq N$). We also assume that G, which could be as large as N but could be smaller, is also of sufficient size to satisfy the numerosity requirement[29] and that the class action also satisfies the other prerequisites for class certification.[30]

Similarly, the costs of discovery in the subsequent cases might be substantially reduced because of the work done in the first case. *See* United States v. AT&T, 461 F. Supp. 1314, 1342–43 (D.D.C. 1978) (ordering, over defendant's objection, that documents that plaintiffs in a prior antitrust case had selected during discovery be produced to a plaintiff in a subsequent case).

25 Although it is possible for a court to require parties who benefit from the creation of a common fund to share in the costs of creating that fund, *see* Sprague v. Ticonic Nat'l Bank, 307 U.S. 161, 170 (1939), the "common fund" concept has never been extended so far as to require later plaintiffs who sue independently to reimburse earlier plaintiffs whose cases eased their own paths to recovery.

26 We can also show that, if one individual has a positive expected net benefit, then that person will file and others may file later, depending upon the outcome of the first trial and the costs that the first-filed case obviates. *See supra* notes 24–25 and accompanying text. If two or more individuals have positive expected net benefits from suing individually, then no one will file in the equilibrium condition. Because we are restricting ourselves only to the case in which no one has an individual incentive to file, *see supra* text accompanying note 23, we do not consider these situations further in this Article.

27 Many games are not prisoner's dilemmas, and judges and legal scholars often overuse (and misuse) the phrase when analyzing the behavioral consequences of legal rules in game theory terms. *See* Richard H. McAdams, *Beyond the Prisoners' Dilemma: Coordination, Game Theory, and Law*, 82 S. CAL. L. REV. 209, 214–18 (2009). But this case is indeed a true prisoner's dilemma; the equilibrium condition of doing nothing leaves all participants in the game (the group of putative plaintiffs in N) worse off than an alternative (aggregation) that relies on the cooperation of others. *See id.* at 215–16. Because that cooperation cannot be guaranteed, however, and because any individual who sought aggregation might end up even worse off (due to the expense of unsuccessfully trying to aggregate) than if the person had done nothing, no party has an incentive to switch his or her strategy from "do nothing" to "aggregate."

28 More than one person can serve as a class representative. *See* FED. R. CIV. P. 23(a) ("One or more members of a class may sue or be sued as representative parties . . . ."). We simplify and assume that a single member of the class can do so.

29 On the numerosity requirement, see *supra* note 17 and accompanying text.

30 Other requirements that the class representative and class counsel must satisfy are com-

We now make certain critical, but realistic, assumptions about the characteristics of this class action. First, we assume that the expected gross benefit to the group increases (or at least never decreases) as the size of the group increases.[31] This condition reflects the fact that, as more members are added to the group, either the collective harm that recovery is based on increases or the probability that the defendant will be found liable increases.[32]

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monality, typicality, adequacy of the class representative, and adequacy of the class counsel. *See* FED. R. CIV. P. 23(a)(2)–(4), (g). The class representative must also meet the related due process requirement of adequate representation. *See* Hansberry v. Lee, 311 U.S. 32, 43–45 (1940). In prior work, one of us has suggested that a class representative meets the adequacy requirement as long as the expected net benefit to each class member (NBC_i) equals or exceeds the expected net benefit from individual action (NBI_i) and the expected net benefit to each class member is at least zero ($NBC_i \geq 0$). Jay Tidmarsh, *Rethinking Adequacy of Representation*, 87 TEX. L. REV. 1137, 1176–77 (2009). These conditions ensure that the class action does not make class members worse off than they would have been in choosing between filing an individual suit or doing nothing. Because the equilibrium condition in negative value cases of the kind we are considering is to do nothing, the class representative must, under this theory, ensure that each class member receives an expected benefit of at least $0—in other words, must not be made worse off by class treatment than by doing nothing. This very minimal condition might seem evident, but it has not always been honored. *See* Kamilewicz v. Bank of Bos., 92 F.3d 506, 508, 512 (7th Cir. 1996) (refusing to overturn a state-court settlement of a negative value class action in which one member of the class received $2.19 in benefits and was assessed a fee of $91.33 to cover costs). This floor can be criticized as too minimal a description of adequacy. *See* Patrick Woolley, *Collateral Attack and the Role of Adequate Representation in Class Suits for Money Damages*, 58 KAN. L. REV. 917, 944–47 (2010). Although this floor is relevant to our analysis at various points, *see infra* notes 50, 57, 63, 74, 78 and accompanying text, our analysis is not affected if a court imposes a stronger adequacy of representation requirement.

31 The expected gross benefit could decrease if members of the class are made worse off by the class action's attempt to rectify the harm that the defendant caused. This is unlikely in most cases, especially involving monetary claims, but the situation could arise if some class members were involved in the alleged impropriety and might suffer adverse consequences if the class action's allegation were proven. In injunctive cases, it is easier to imagine situations in which all class members might be harmed by the injunction that the class representative seeks. *See, e.g.*, *Hansberry*, 311 U.S. at 37–38. Because the class representative could not adequately represent harmed individuals, *see supra* note 30 and accompanying text, the class definition would need to exclude them. *See, e.g.*, Little Caesar Enters., Inc. v. Smith, 172 F.R.D. 236, 240–41 (E.D. Mich. 1997) (noting that a class definition in an antitrust case excluded, among others, the defendants, the officers and directors of the principal defendant, and its subsidiaries). Once these individuals are excluded, the condition described in the text necessarily holds.

32 In mathematical terms, an increasing gross benefit to group G can be expressed as $EB(G)$, where the first derivative with respect to G is positive and the second is negative.

Experimental data suggest that, as group size increases, the likelihood of the group's recovery increases, even if awards to some plaintiffs might decrease. *See* Irwin A. Horowitz & Kenneth S. Bordens, *The Effects of Outlier Presence, Plaintiff Population Size, and Aggregation of Plaintiffs on Simulated Civil Jury Decisions*, 12 LAW & HUM. BEHAV. 209, 226 (1988); *see also* Irwin A. Horowitz & Kenneth S. Bordens, *The Consolidation of Plaintiffs: The Effects of Number of Plaintiffs on Jurors' Liability Decisions, Damage Awards, and Cognitive Processing of Evidence*, 85 J. APPLIED PSYCHOL. 909, 914, 917 (2000) (reporting data showing that the likelihood of recovery increases with the inclusion of more plaintiffs, but the average damage award

Next, we make one of two assumptions about the marginal benefit of adding an additional class member. First, in some (albeit rare) cases, the marginal benefit of adding an additional class member never increases or decreases; each class member obtains precisely the same expected gross benefit from the class action. These cases will almost always involve monetary claims for violation of a statute that sets mandatory minimum damages in excess of any class member's actual loss.[33] We can graph expected gross benefits to the class as follows, with the line MB_1 representing the marginal benefit from adding each additional class member.

Figure 1. Equal-Benefit Case

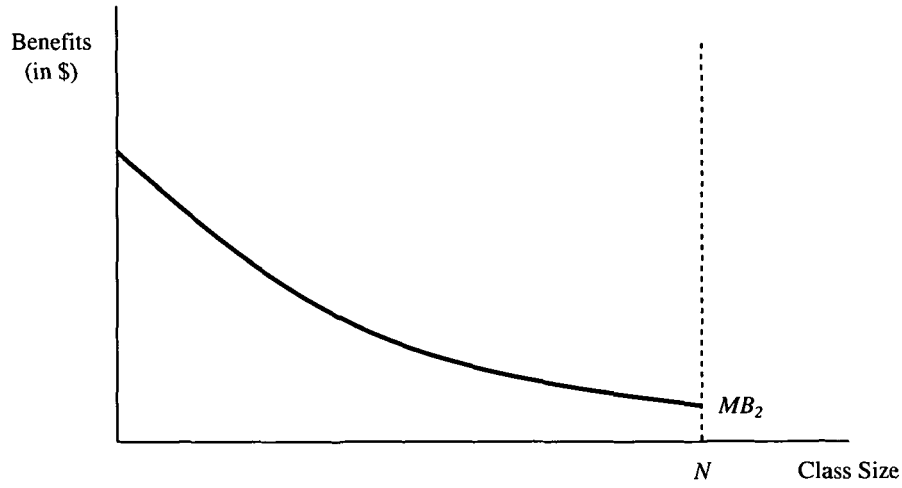
In most cases, however, Figure 1 is inapposite. Rather, the benefit of the expected remedy varies among members of the class. For example, an injunction ordering desegregation of a school system has greater benefits to those who are in kindergarten than those who are seniors in high school. Likewise, the amount of compensation appropriate for securities fraud varies with the number of shares each class member possesses. If we sort individuals by the harm they have suffered from the largest amount to the smallest, we can graph the ex-

decreases if more than four plaintiffs are aggregated). This result seems to confirm the common sense intuition that, as the number of victims rises, factfinders are more likely to think that the defendant did something wrong.

33 *Cf.* Ratner v. Chem. Bank N.Y. Trust Co., 54 F.R.D. 412, 416 (S.D.N.Y. 1972) (declining to certify a class of 130,000 consumers that sought $13 million in $100-per-claim statutory damages, in part because using a class action would impose excessive liability).

pected gross benefit as follows, where the line MB_2 represents the marginal benefit from adding each additional class member.[34]

Figure 2. Declining-Benefit Case



Next, we make certain assumptions about costs. We first assume that the total cost of litigation, represented by $TC(G)$, increases as the size of the group increases.[35] Second, we assume that the marginal cost of adding new class members is generally falling. This assumption is contrary to the usual assumption that marginal costs rise, but, in

34 The area under the marginal benefit curve represents the total gross benefit of a group of size G, $EB(G)$.

35 In mathematical terms, the first derivative of $TC(G)$, the marginal cost of an additional group member, is positive everywhere. This assumption seems realistic in all cases involving monetary relief delivered to individual class members; the costs of identifying the class member and delivering a remedy to that member make costs rise when each new member is added to the class. The same is also true for many cases seeking injunctive relief. For instance, an order to establish a medical monitoring program requires the expenditure of money to identify class members and determine their eligibility for the program. Put differently, if the remedy requires individualization of relief to class members, total costs rise as the size of the class increases. Some injunctions—notably public law injunctions that strike down legislation as unconstitutional—arguably do not meet this description; beyond a certain point, they impose no additional costs as more members are brought into the class. Even in this situation, however, some class members might subsequently attack the judgment in later cases. *See, e.g.*, *Hansberry*, 311 U.S. at 32, 39–40 (permitting successors in interest to a property owner who was bound by a classwide injunction to challenge the injunction's applicability to them); *see also infra* note 89 (discussing collateral attacks). Spread across the class as an expected cost, the inclusion of more class members will increase costs slightly; as the size of the class increases, the chances for such collateral attacks also increase. In any event, if total costs do not increase as the size of the class increases, then the marginal cost of adding new class members is zero. Our subsequent analysis is therefore unaffected; in such cases, the optimal class size is N. *See infra* text accompanying Figures 4, 7.

general, it seems a reasonable assumption in the class action context. A principal component of the cost of litigating the action is the cost of the initial discovery, which is the same whether the case involves one or N plaintiffs. Although costs might increase somewhat as the size of the class increases—for instance, the defendant might feel the need to conduct more discovery as its exposure to liability increases,[36] or the inclusion of more class members might require the use of additional methods to notify the class[37]—economies of scale are likely to offset these increases.

Third, we assume, more controversially, that the marginal cost declines continuously from the first class member, who has the highest expected gross benefit, to the last class member n, who has the lowest.[38] Again, this assumption is generally reasonable; larger claims are likely to involve larger costs, and, in particular, the class counsel and defense lawyers will work harder to maximize or minimize, respectively, the value of the largest claims. Any discontinuities involving rising marginal costs are most likely to happen in one of two places. The first occurs with the first few additions to the class before the class reaches a size that either meets the numerosity requirement or is economically viable to bring. Thereafter, marginal costs should fall as additional class members exhibit patterns comparable to the early members of the group.[39] The second occurs at the tail end of the class

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36 *Cf.* Hardy v. Johns-Manville Sales Corp., 681 F.2d 334, 346–47 (5th Cir. 1982) (refusing to give issue-preclusive effect to a prior judgment involving only one asbestos plaintiff because the defendants had a limited incentive to expend significant resources in the prior case).

37 *See* FED. R. CIV. P. 23(c)(2) (discussing when notices should or must be given to class members in mandatory and opt-out class actions).

38 This assumption necessarily holds when every class member obtains the same benefit from the class action. Because the marginal benefit for each class member is identical, we obtain declining marginal costs simply by sorting individuals by their costs of litigation (from the largest amount to the smallest). For reasons that we explain *infra* notes 47–48 and accompanying text, it is better to sort class members in a different fashion in which marginal costs might start to rise as the class size approaches N. *But see infra* note 59 (describing situations in which this sorting is unavailable).

39 For instance, the plaintiff with the most highly valued claim might reside in Vermont. The person with the next-greatest claim might live in Georgia, and the third might live in New York. A principal cost of maintaining any class action is providing notice to class members. *See* Eisen v. Carlisle & Jacquelin, 417 U.S. 156, 175–76 (1974) (requiring individual notice to every reasonably identifiable class member in an opt-out class action). When the class members are known, the cost of giving notice should remain fairly fixed for each new class member. When the class includes members who are not readily identifiable, however, substitute notice in print and broadcast media might become necessary. The costs of a substitute notice campaign in Vermont could be significant, but the inclusion of the second plaintiff and the cost of substitute notice in the Georgia market increases the marginal cost of including the second class member. The same is true of adding the third member from New York. At some point, a nationwide

(i.e., the class members approaching n), where it becomes more and more difficult to identify those who suffered increasingly modest harms and where the costs of administering the remedy might increase due to rising labor and other associated costs.[40] Our subsequent analysis relaxes the assumption of continuously falling marginal costs.[41]

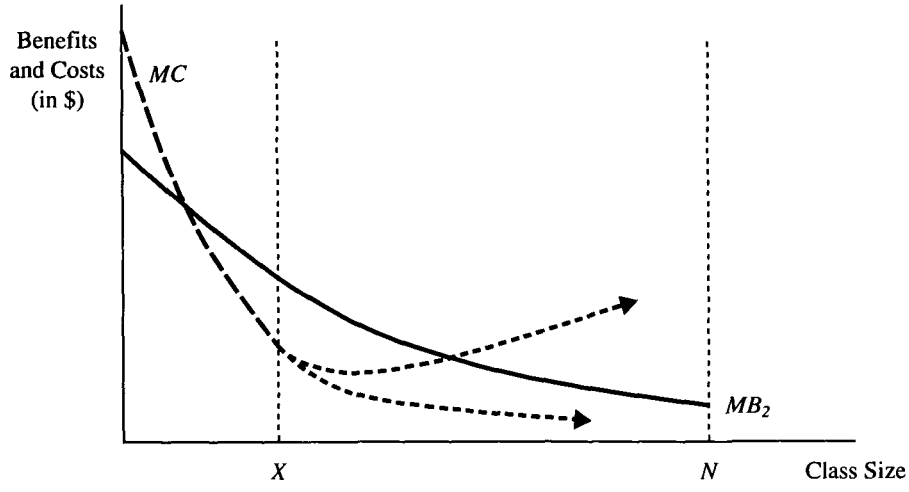
Finally, we assume that the class action is at some point economically viable (i.e., the expected gross benefits from a class action of size X equal or exceed the total costs of a class action of that size). We can express this condition as: $EB(X) \geq TC(X)$, $X < N$; or by means of Figure 3, where X represents the number of class members whose inclusion in the class makes the class action viable. As Figure 3 depicts, the costs of litigation for the highest-value plaintiff exceed the benefits they would received from a successful suit, and, consequently, they would not initiate an action. As more members of the class are brought into the action, however, the costs of the action rise more slowly than the total benefits of the remedy to the members of the group. Eventually, at X members, the total benefits of the action exceed the total costs.

notice campaign to reach unidentified class members might become necessary. These media campaigns can be very expensive. *See* TIDMARSH, *supra* note 8, at 55, 67–68 (describing costs of $7 million and $22 million associated with nationwide notice in two mass tort settlement class actions). As more members from a state are added as class members, however, these costs should fall for the reasons described in the text.

40 For now, we assume that relief in the nature of cy pres is unavailable, and that each class member must receive relief corresponding to the harm he or she suffered. *See* PRINCIPLES OF THE LAW OF AGGREGATE LITIG. § 3.07 (2010) (discussing the conditions under which cy pres relief is appropriate); *supra* note 20 and accompanying text (declining to specify the relationship between the harm suffered and the remedy awarded); *see also infra* note 53 and accompanying text (discussing cy pres relief). We relax this assumption *infra* notes 53–56, 62 and accompanying text.

41 *See infra* text accompanying Figures 5–6, 8–9, 11.

Figure 3. Class Size Where Total Benefits Equal Total Costs



We do not specify the marginal cost (MC) line beyond x for reasons that we explain shortly.[42]

Equipped with these assumptions, we can now determine the optimal size of a class action. Once we have done so, we can then analyze the circumstances under which an opt-out right is justified, as well as the relationship between optimal class size and the *Principles*' concept of divisible remedies as the determinant of the right to opt out.

II. The Optimal Size of a Class Action

In analyzing the optimal size of a class action, we begin by examining the relationship between the marginal benefits and marginal costs of different group sizes G.

Once we have created a group of size X, a class should continue to add members as long as the benefit of adding another class member exceeds the cost of doing so—in other words, as long as $MB(G) > MC(G)$. It should stop adding class members once the cost of adding another class member exceeds the benefit from doing so—in other words, when $MB(G) < MC(G)$.[43]

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42 We specify possible shapes of the marginal cost line *infra* Figures 7–11.

43 If marginal costs are always rising, then negative value class actions could never form. Because no individual has an incentive to sue, the marginal costs of bringing a class action are higher for the first class members than the marginal benefits of a class action. If marginal costs rise from there, while marginal benefits remain steady or fall, costs would always exceed benefits, and the class action would never be viable. The fact that negative value class actions form is an experiential confirmation of our assumption, *see supra* notes 35–37 and accompanying text, that marginal costs generally fall as class size increases.

Under the assumptions we have specified, the shape of the marginal benefit and marginal cost lines will usually result in one equilibrium point and, therefore, one optimal class size. In one case, however, more than one equilibrium point exists, and determining the optimal group size becomes more complicated.

A. *Identical-Benefit Class Actions*

We start with the rare, but illustratively useful, situation in which the value of the remedy is identical for each individual in the class.[44] This situation yields a single equilibrium point—a single optimal group size. Simplistically, it might be thought that this class size is N. This idea is reflected in the position taken by the *Principles*, which do not require an opt-out right when the remedy given to one class member in essence determines the remedy to be given to other class members.[45]

The argument that N is the optimal size is straightforward. Because the marginal benefit of adding an additional class member is, by definition, always the same, we can order the class members from the member with the highest marginal costs to the member with the lowest. When the class adds member x, the total benefit of the class action equals its total cost.[46] If this break-even point comes just as a class of size n is formed (in other words, $X < N$), then N is the only class that can be formed consistent with our assumptions. On the other hand, if the break-even point arrives before the class reaches size N (in other words, $X < N$), then adding class members x through n is economically justified. At point X, marginal cost is less than marginal benefit, and the ordering of class members assures that the marginal cost will fall from x to n, while, by definition, the marginal benefit remains constant (and larger). Because the marginal benefit of adding each member x through n is greater than the cost of adding that member, the class benefits by adding these members until the class N is formed. In mathematical terms, a class of size N is optimal because $MB_i > MC_i$ for $x < i \leq n$. Figure 4 graphs this result.

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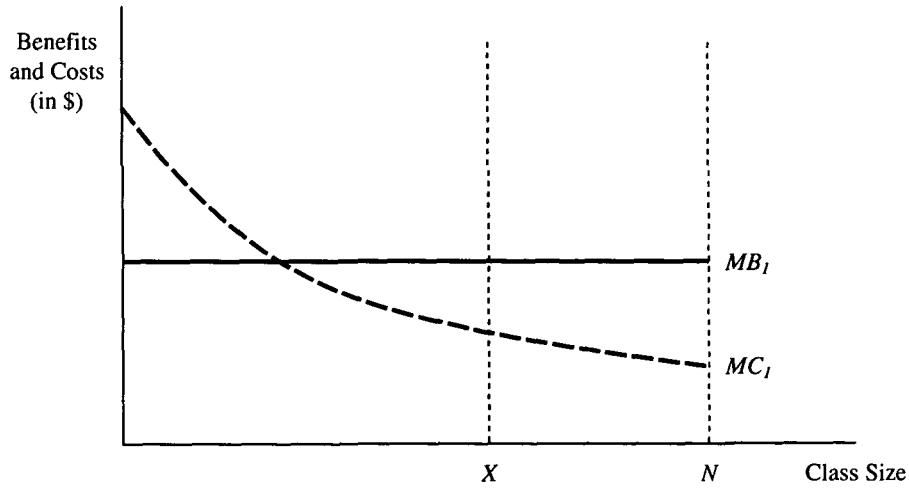
44 *See supra* Figure 1 and accompanying text.

45 *See supra* notes 11–14 and accompanying text.

46 *See supra* Figure 3 and accompanying text.

Figure 4. Optimal Class Size (N) in Equal-Benefit Case



But this argument—that a class of size N is optimal in identical-benefit cases—holds only in some circumstances. In other situations, a smaller class is optimal. To explain, we must distinguish between common costs (those costs whose expenditure benefits the group as a whole) and individual costs (those costs whose expenditure benefits only an individual class member). Roughly, common costs arise in the process of determining the defendant's liability or resolving classwide defenses (e.g., the costs of investigating the defendant's liability, disclosure and discovery costs, the costs of seeking class certification, the costs of responding to motions to dismiss or for summary judgment, and other costs involved in determining whether the class has a viable claim). For the most part, common costs are invariant with the size of the class. Therefore, marginal common costs are falling (perhaps even reaching zero) as the class approaches size N. On the other hand, individual costs are often associated with remedial issues (e.g., the costs of determining each class member's entitlement to a remedy, the costs of determining the amount of each member's remedy, the costs of delivering that remedy to the individual class member, and the costs of resolving plaintiff-specific defenses, such as contributory negligence, that affect both the entitlement to and the amount of the remedy). Many of these costs vary among individuals[47] and can rise as the

47 Sometimes costs might not vary. For instance, in the identical-remedy scenario, the cost of determining the remedy, which by definition is the same for each class member, does not change. Likewise, identical-remedy cases usually involve consumer fraud and other statutory violations in which individual defenses are limited or nonexistent. Finally, in some consumer

identification of class members and the administration of a remedy become increasingly difficult due to informational problems.[48]

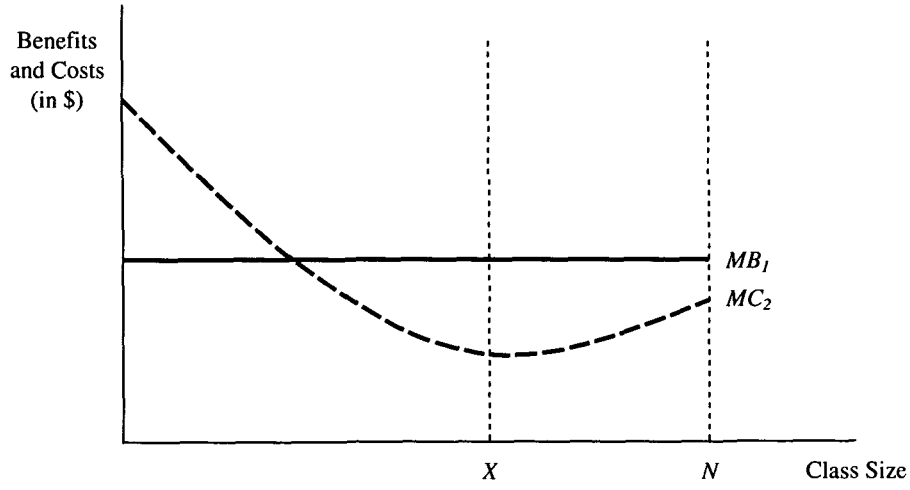
If we order class members from those with the lowest *individual* costs to the highest, we find that marginal costs can rise as the group approaches the maximum class size N. It is possible, although not inevitable, that the marginal cost of adding some class members—determined by combining the marginal common costs attributable to that class member plus the marginal individual cost associated with that class member—exceeds the marginal benefit that the class obtains from adding that member. For instance, it might cost $500 to identify a consumer entitled to a $100 remedy. The inclusion of class members for whom the marginal cost of class membership exceeds the marginal benefit of class membership is suboptimal; a smaller class size (call it G_1) that excludes these members is optimal.

Thus, we have three scenarios. In the first, marginal individual costs never rise. This is the situation depicted in Figure 4, and the optimal class size is N. In the second scenario, marginal individual costs rise as the class size approaches N, but the marginal benefit of adding class member n remains higher than the marginal cost. In this scenario, the optimal class size is also N, as Figure 5 depicts, with the line MC_2 representing the eventually rising marginal costs.

fraud cases, such as cases involving holders of credit cards issued by the defendant, the cost of identifying the members of the class also might be constant across the class.

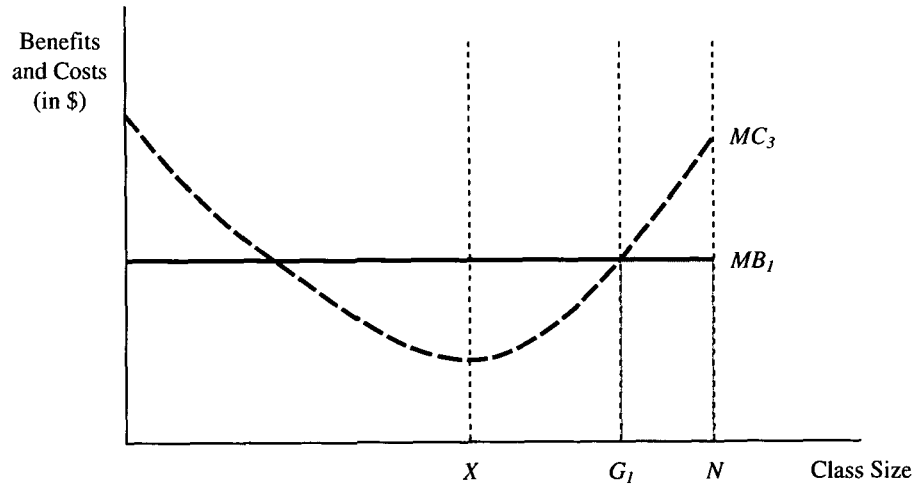
48 In addition, some literature suggests that, as a group's size increases, the incentive of group members to cooperate decreases. *See* T. K. Ahn et al., *Endogenous Group Formation*, 10 J. PUB. ECON. THEORY 171, 190–91 (2008); Dale O. Stahl & Ernan Haruvy, *Other-Regarding Preferences: Egalitarian Warm Glow, Empathy, and Group Size*, 61 J. ECON. BEHAV. & ORG. 20, 33 (2006). It is not clear that this possibility has great salience in the class action context, given that little active cooperation is expected of class members. *See infra* note 82 and accompanying text. To the extent that it has salience, however, this possibility also adds another cost that increases as the size of the class approaches N. We thank Beth Burch for calling our attention to this literature.

Figure 5. Optimal Class Size (N) in Equal-Benefit Case



In the third scenario, marginal individual costs rise as the class size approaches N, and eventually exceed marginal benefits once the class reaches size G_1. Figure 6 depicts this scenario, with the line MC_3 showing the rise in marginal costs.

Figure 6. Optimal Class Size (G_1) in Equal-Benefit Case



In this third scenario, because marginal costs continue to rise for class members after g_1 through n, the marginal benefit of adding these class members is less than the marginal cost of doing so; the class is better off by excluding class members g_1 through n from the class. Therefore, the optimal class size is G_1. A class larger than G_1 leads to lower net benefits than a class of size G_1, but so does a class smaller

than G_l, because the class could be made better off by adding members up to g_l.[49] In the scenario represented by Figure 6, the inclusion of class members g_l through x is not only inefficient, but, to the extent that these members are assessed the full costs associated with their claims, it also leaves them worse off than they would have been had they not sued—a result that arguably renders the certification of a class larger than G_l constitutionally impermissible.[50]

Certifying the class G_l carries one important disadvantage: the defendant does not pay for some of the harm that it causes. Assuming that the expected gross benefits for class members between g_l and x equal the harm caused,[51] then the shaded area in Figure 6 represents the amount of liability that the defendant avoids when G_l is the optimal class size.

Failing to force the defendant to internalize all the harm it causes is perhaps not a great concern in most identical-benefit cases, in which the statutory damages can exceed class members' actual losses.[52] To the extent that full internalization is desirable, however, two methods can address the issue. First, the court or class counsel can spread some of the costs associated with the claims of class members g_l through x among the remaining class members, so that the cost for each member from g_l through x falls to or beneath the benefit that member receives. This cost spreading allows a class of size N to be formed, but it also yields a class with a lower net benefit than the class G_l, making this approach suboptimal.

Second, a court can require the defendant to disgorge an amount of money equivalent to the amount of harm caused to class members g_l through x, but not award the disgorged amount to those members. Rather, the money can be put to another use that might be of indirect benefit to class members. In other words, the court can award cy pres relief.[53] Cy pres, however, poses its own problems. With cy pres, the marginal benefits for class members g_l through x fall toward zero, but

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49 Formally, a class of size G_l is optimal when:

(1) $EB(X) \geq TC(X)$, $X < N$;

(2) $x < g_l < n$;

(3) $MB_i > MC_i$ for $x < i \leq g_l$; and

(4) $MB_i < MC_i$ for $g_l < i \leq n$.

On the first term, see *supra* Figure 3 and accompanying text.

50 *See supra* note 30.

51 On this assumption, see *supra* note 20 and accompanying text.

52 *See supra* note 33 and accompanying text.

53 The *Principles*' approach to cy pres relief is consistent with our analysis. It allows cy pres relief to be awarded when providing relief to individuals is "not viable." PRINCIPLES OF THE LAW OF AGGREGATE LITIG. § 3.07(c) (2010); *see also id.* § 3.07(a) (requiring that courts provide

so do their marginal costs.[54] Although the amount of class members' claims determines the amount of cy pres relief, the presence of class members g_1 through x in the case is unnecessary.[55] Hence, even with cy pres relief, G_1 remains the optimal size for the class. Although the analysis of optimal class size brings cy pres awards into proper focus, whether to award cy pres relief is a policy question distinct from achieving optimal aggregation.

B. Declining-Marginal-Benefit Class Actions

We now move to the typical situation in which the benefit derived from the class action varies among class members. In this scenario, the analysis is, for the most part, the same as the analysis for the identical-benefit situation, but with an important twist: in some situations, multiple equilibrium points can arise, making the choice of the optimal class size more complicated. We begin with cases in which there is a single equilibrium point and, therefore, a readily identifiable optimal class size. We then analyze the multiple-equilibrium condition.

1. A Single Equilibrium Point

Figures 4, 5, and 6 considered three possible marginal cost scenarios—constantly falling marginal costs, rising marginal costs that never exceed marginal benefits as the class approaches size N, and rising marginal costs that exceed marginal benefits beyond class size G_1—for identical-benefit class actions. As we saw, N is the optimal group size in the first two scenarios, and G_1 is the optimal group size in the last

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individual relief when "individual class members can be identified through reasonable effort, and the distributions are sufficiently large to make individual distributions economically viable").

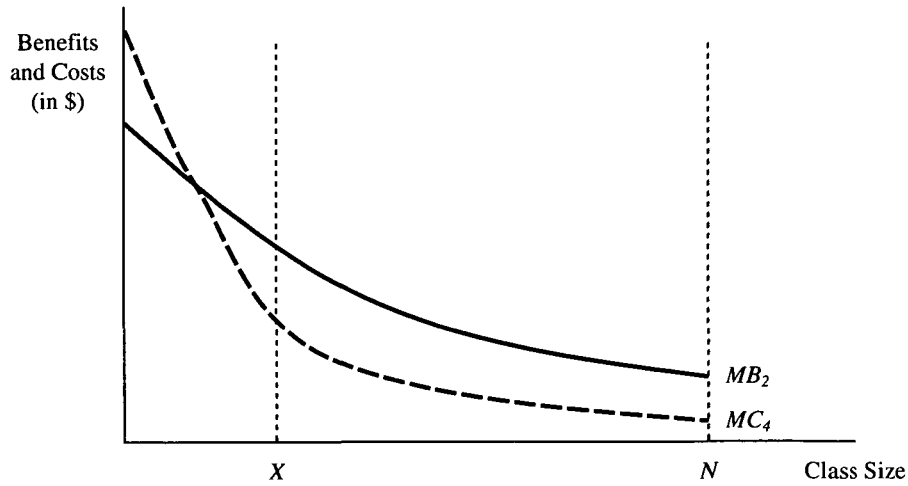
54 For instance, in *Democratic Central Committee of the District of Columbia v. Washington Metropolitan Area Transit Commission*, 84 F.3d 451 (D.C. Cir. 1996), the plaintiffs alleged overcharging of transit users during the 1960s. By the time that the case settled twenty-five years later, it would have been impossible in some cases and cost-prohibitive in others to identify and compensate the victims. The D.C. Circuit upheld the award of cy pres relief—in particular, the purchase of new buses that benefited present transit users. *See id.* at 458. Transit users from the 1960s who were still riding buses in the 1990s therefore obtained some indirect benefit from the cy pres award; other transit users from the 1960s (for instance, those who died or moved away) received none. On the other hand, because costs associated with the creation and distribution of the fund were charged against the cy pres fund and not charged to victims, *see id.* at 458–59, the marginal costs to these victims was comparably low.

55 Including class members g_1 through x has the arguable advantage of binding them to the class judgment or settlement. But, in a negative-value situation, their individual claims were worth nothing to begin with; because they were never going to sue, this preclusive effect is, as a practical matter, irrelevant. Moreover, if these class members are assessed the costs of bringing their claims, the Constitution might prohibit a court from extending the preclusive effect of a judgment or settlement to these members. *See supra* note 30 and accompanying text.

scenario. In the context of falling marginal benefits, the same three scenarios can also arise, albeit with one modification. Because marginal benefits are falling, marginal costs need not be rising for marginal costs to exceed marginal benefits. Instead, as long as marginal benefits for class members x through n fall faster than marginal costs, it is possible, although not inevitable, that at some point the marginal cost of adding an additional class member will exceed the marginal benefit, and a class size of less than N will be optimal.

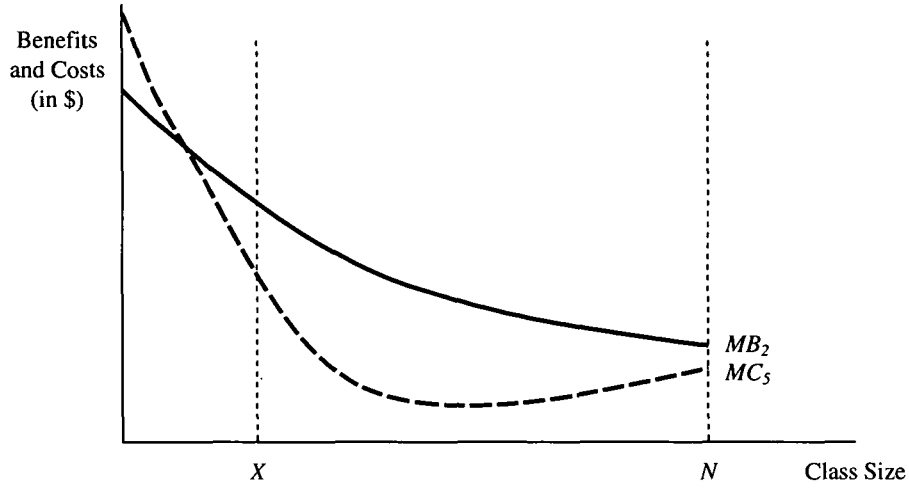
With this modification, the results derived from Figures 4, 5, and 6 still obtain. The scenario equivalent to Figure 4, in which marginal costs are below marginal benefits and are constantly falling, is shown in Figure 7, with MC_4 representing the marginal costs of adding class members. Here, for the reasons already described, the optimal group size is N.

Figure 7. Optimal Class Size (N) in Declining-Benefit Case



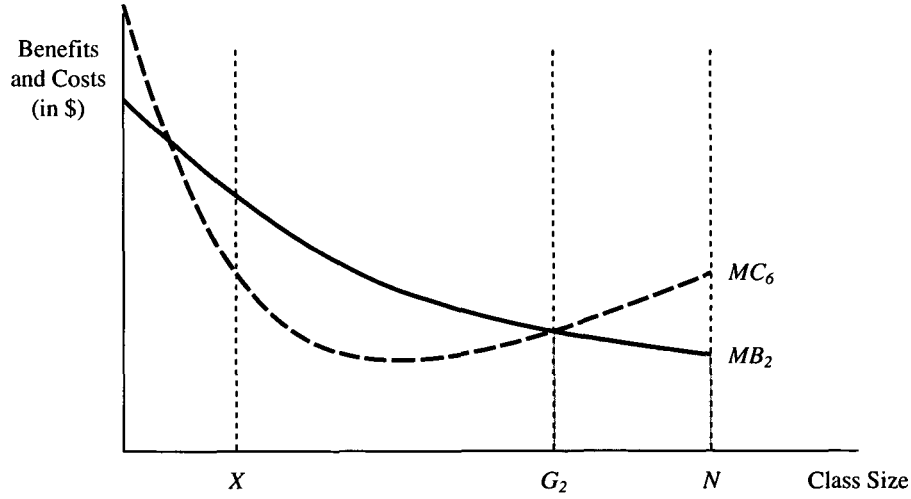
Next, the scenario equivalent to Figure 5, in which marginal costs remain beneath marginal benefits but either flatten out or rise as the size of the class approaches N, is shown in Figure 8, with MC_5 representing the marginal costs of adding class members. Once again, the optimal group size is N. Although the shape of the marginal cost lines MC_4 and MC_5 differ, the result in the two scenarios is the same.

Figure 8. Optimal Class Size (N) in Declining-Benefit Case



Finally, the scenario equivalent to Figure 6, in which marginal costs eventually exceed marginal benefits for some class members, is shown in Figure 9, with MC_6 representing the marginal costs of adding class members. Now the optimal size for the class is G_2.

Figure 9. Optimal Class Size (G_2) in Declining-Benefit Case



As with Figure 6, the shaded area represents the amount by which the defendant avoids liability if the class G_2 is formed. A court's choices are either to allow the defendant to escape liability for the harm caused to the class members between g_2 and n, or to employ some strategy to capture this value for the class (such as spreading

excess costs from class members from g_2 through n onto other class members or awarding cy pres relief).[56]

To summarize, the optimal class size is N when marginal costs remain beneath marginal benefits for class members x through n (the scenarios in Figures 7 and 8).[57] A smaller class (G_2) is optimal when marginal costs rise above marginal benefits for class members g_2 through n (the scenario in Figure 9).[58] But these results obtain only when marginal costs either remain below marginal benefits as more class members beyond x are added, or when marginal costs exceed marginal benefits at a single, unique point, g_2.[59] As the following Subsection describes, the latter condition does not always obtain.

2. *Multiple Equilibrium Points*

Multiple equilibriums exist when there is more than one point at which the marginal cost of adding an additional class member exceeds the marginal benefit from doing so (i.e., $MB(G) = MC(G)$). To illustrate, consider Figure 10, with MC_7 representing the marginal cost of adding additional class members.

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56 *See supra* notes 51–55 and accompanying text.

57 Formally, a class of size N is optimal when:

(1) $EB(X) \geq TC(X)$, $X \leq N$;

(2) $MB_i > MC_i$ for $x < i \leq n$.

On the first term, see *supra* text following note 41.

58 Formally, a class of size G_2 is optimal when:

(1) $EB(X) \geq TC(X)$, $X \leq N$;

(2) $x < g_2 < n$;

(3) $MB_i > MC_i$ for $x < i \leq g_2$; and

(4) $MB_i < MC_i$ for $g_2 < i \leq n$.

On the first term, see *supra* text following note 41. This formula is equivalent to the formula for determining the optimal group size in an identical-benefit situation. *See supra* note 49.

59 The analysis suggested by Figures 7–9 has other limits and should be interpreted with care. Unlike the situation of a fixed remedy for each class member, *see supra* text following note 48, we cannot order class members from those with the lowest to the highest individual costs. Although we have assumed that as a class member's expected benefit falls, the class member's cost also falls, *see supra* notes 35–40 and accompanying text, the association between falling marginal benefits and falling marginal costs is neither inevitable nor continuous. It is not inevitable because, although common costs might remain constant or decline, individual costs associated with identifying and awarding relief to some class members can result in the marginal cost for some class members exceeding the benefit that the class member obtains. *See supra* text following Figure 4. The decline is not continuous because there are likely to be discontinuities not reflected in Figures 7–9. For instance, the marginal cost might exceed the marginal benefit on a $500 claim of a difficult-to-identify class member, but the marginal cost might not exceed the marginal benefit on a $100 claim of an easy-to-identify class member. One response to this latter difficulty is to remove such people from the class on the theory that they are inadequately represented. *See supra* note 30. For further discussion, see *infra* notes 74–75 and accompanying text.

Figure 10. Multiple Equilibriums Where *N* Is Optimal Class Size

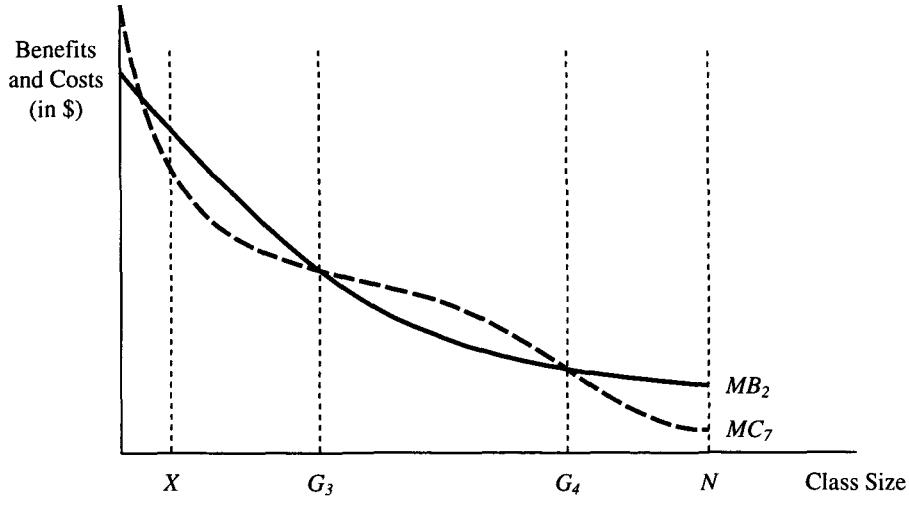
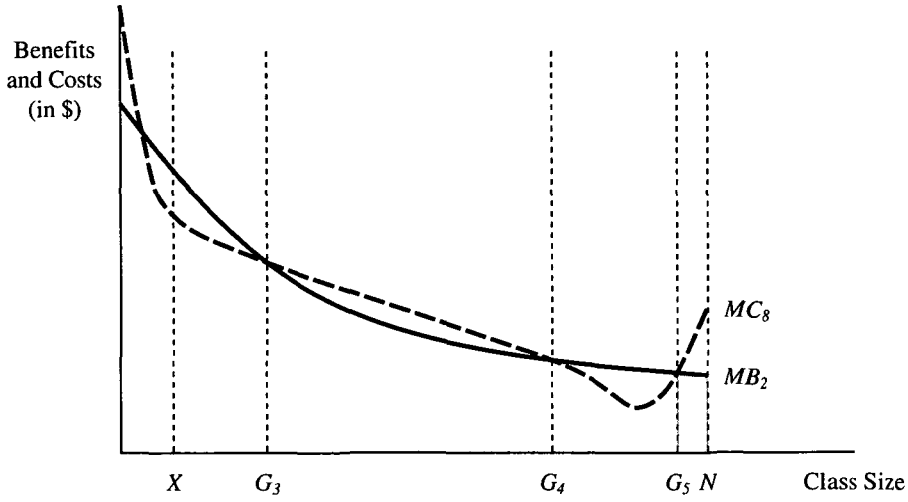


Figure 10 shows two equilibriums: a class of size G_3 and a class of size N. G_3 is an equilibrium because a class that has a number of members between x and g_3 can make itself better off by adding members up to g_3 (the marginal benefit of doing so exceeds the marginal cost (i.e., $MB_i > MC_i$ for $x < i \leq g_3$)), but it makes itself worse off if it adds one more member than g_3 (the marginal benefit of doing so is less than the marginal cost (i.e., $MB_i < MC_i$ for $g_3 < i \leq g_4$)). But N is also an equilibrium, for a class that reaches size G_4 can make itself better off by adding members from g_4 through n (the marginal benefit of doing so exceeds the marginal cost (i.e., $MB_i > MC_i$ for $g_4 < i \leq n$)).

Rather than N, however, equilibriums can occur with classes of size G_3 and G_5 when the marginal cost for adding class members from g_5 through n is greater than the marginal benefit of doing so (i.e., $MB_i > MC_i$ for $g_4 < I \leq g_5$ and $MB_i < MC_i$ for $g_5 < i \leq n$). With marginal cost line MC_8 somewhat exaggerated to illustrate the point, Figure 11 shows the circumstance in which G_3 and G_5 (rather than G_3 and N) are equilibriums.

Figure 11. Multiple Equilibriums Where G_5 Is Optimal Class Size



For the sake of simplicity, we assume that G_3 and N (rather than G_3 and G_5) represent the equilibrium points.[60] It is an easy matter to determine which one of these two equilibriums yields the optimal group size: We compare the expected net benefits of a class with size G_3 to the expected net benefits of a class with size N. If the expected net benefits of a class of size N are greater (i.e., $EB(N) - TC(N) > EB(G_3) - TC(G_3)$), then a class of size N is optimal. If the converse is true, a class of size G_3 is optimal.[61] If G_3 is optimal, we again face the problem that the defendant does not internalize the full costs of its wrong (here, the losses suffered by plaintiffs g_3 through x). The same potential responses—ignore the harm or force internalization through cy pres—also remain.[62]

Figures 10 and 11 also point out a significant concern. For the class members between g_3 and g_4, the costs of class treatment exceed the benefits. If these members are assessed the cost of their inclusion in the class, they end up worse off as a result of their class membership than they would have been had they done nothing. This result is of no concern if the optimal class size is G_3, but it is a significant stumbling

60 The analysis would be the same if G_3 and G_5 were the equilibrium points, except that G_5 would be substituted for N in the subsequent discussion.

61 In our analysis, we have focused on situations in which there are two equilibrium points. It is also possible that marginal costs will fluctuate above and below marginal benefits for additional class members, creating a serpentine marginal cost line beyond g_3. In such a case, there are multiple equilibrium points (one at each point at which marginal benefits and costs are equal). In terms of determining the optimal group size, the net benefits of all of the groups would need to be considered.

62 *See supra* notes 51–55 and accompanying text.

block if the optimal size is G_5 or N.[63] It seems unfair to ask the class members between g_3 and g_4 to "take one for the team." Moreover, if the Constitution requires the class representative to not harm the interests of the represented class members, then the class representative will be regarded as inadequate and the class will not be certified.[64] Here, the only solution to hold the class together is to spread the losses suffered by the class members between g_3 and g_4 among the remaining class members, so that the members between g_3 and g_4 are at least indifferent to class treatment, and might indeed be advantaged by it. This type of loss spreading, which must be accomplished to hold onto a class of optimal size, should be distinguished from the loss spreading we discussed before, in which loss spreading was used to create a class larger than the optimal size.[65]

C. *Summary*

We can generalize our analysis as follows: a class action composed of all class members N is optimal when (1) the marginal benefit of adding class member n exceeds the marginal cost of doing so and (2) the expected net benefit of this class action exceeds the net benefit of any other class action composed of fewer members than n.[66]

When these conditions do not hold, the optimal class size is G^* ($g^* < n$), where G^* meets these conditions: (1) the marginal benefit of adding another member beyond g^* is less than the marginal cost of doing so, and (2) the expected net benefit of the class G^* exceeds the net benefit of any other class action that could be constituted.[67]

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63 This analysis suggests how it is possible, even without bad faith or strategic behavior on the part of the class counsel or the class representative, for some class members in a negative-value case to end up worse off than they would have been had they done nothing. The poster child for such a situation is *Kamilewicz v. Bank of Boston*, 92 F.3d 506 (7th Cir. 1996); *see also supra* note 30 (discussing *Kamilewicz*). From one viewpoint, *Kamilewicz* represented a case in which the rapacity of class counsel overbore the interests of the class members. *See* Susan P. Koniak, *How Like a Winter? The Plight of Absent Class Members Denied Adequate Representation*, 79 NOTRE DAME L. REV. 1787, 1808–17 (2004). We do not intend to wade into that discussion. We note only that an alternate explanation is possible.

64 *See supra* note 30.

65 *See supra* text accompanying note 52.

66 Formally, the conditions are:

(1) $EB(X) \geq TC(X)$, $X \leq N$;

(2) $MB_n > MC_n$; and

(3) $EB(N) - TC(N) > EB(G) - TC(G)$ for any $G_{x \to n}$.

An equivalent, simpler formulation of the latter two conditions is $MB_i > MC_i$ for $x \leq i \leq n$. We adopt the lengthier formulation to correspond with the formula set forth *infra* note 67.

67 Formally, the conditions are:

(1) $EB(X) \geq TC(X)$, $X \leq N$;

Although generalizations are always dangerous, this analysis suggests that, as a general matter, class actions of size N (i.e., class actions composed of the entire group of injured parties) are most likely to be appropriate in cases that involve little to no individualized tailoring of the remedy to members of the class. One example is a lawsuit seeking to declare a statute or governmental practice unconstitutional, at least when individualized remedial consequences are unlikely to follow from the declaration. On the other side of the spectrum, an optimal class size of less than N is more likely when significant issues in the case are member-specific and heavily fact-laden (such as individualized defenses or the provision of individualized remedies to class members whose membership in the class or entitlement to a remedy are not readily ascertainable). In the absence of a significant number of individualized issues, a presumption in favor of a class of size N seems warranted. But this is only a rule of thumb; the inquiry into optimal class size is fact-dependent.

As we end our discussion of optimal class size, one point bears emphasis. Our analysis does not guarantee that a class of optimal size will form. Assume that N is the optimal size for the class action depicted in Figure 10. If a class forms at size G_3, the class members have no incentive to form a class larger than G_3; the class members will not see their own benefits increase, and they run the risk of depressing their own awards by adding lower-value claims.[68] Conversely, suppose that a class of size G_3 is optimal. Class counsel, who can expect that the fee award will be based on the total value of the award to the class rather than on the award that yields the greatest net benefit,[69] has an incentive to seek certification of a class of size N rather than a class of size G_3.

The best way to assure that classes of optimal size are formed is to deny class certification to classes that are suboptimal. At present, however, optimal class size is not an explicit consideration when courts decide whether to certify a class action. In theory, optimal class size could be a relevant variable in determining whether the superior-

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(2) $MB_{g^*} > MC_{g^*}$;

(3) $MB_{g^*+1} < MC_{g^*+1}$; and

(4) $EB(G^*) - TC(G^*) > EB(G) - TC(G)$ for any $G_{x \to n}$ other than G^*.

68 *See supra* note 32; *see also In re* Agent Orange Prod. Liab. Litig., 818 F.2d 145, 167 (2d Cir. 1987) (noting "the difficulty in fashioning a distribution scheme that does not overcompensate weak claimants and undercompensate strong ones" in class actions).

69 *See supra* note 35 and accompanying text.

ity prong in Rule 23(b)(3) opt-out class actions has been met.[70] For the most part, however, courts consider other matters—such as the manageability of the class action and the existence of nonclass aggregation mechanisms—when determining superiority.[71] In Rule 23(b)(1) and (b)(2) class actions, there is no hook precisely comparable to superiority on which to hang an optimality analysis.[72] Our discussion suggests that, in deciding whether to certify a particular class, and in deciding which among numerous competing classes to certify, a court should make optimal class size a relevant consideration.

III. Optimal Class Size and Opt-Out Rights

Thus far, we have said nothing about opt-out rights. In the situation that we are analyzing—cases in which no class member has an incentive to sue individually—opt-out rights might seem a moot point, for no rational class member who stands to gain (or at least not lose) from class treatment would instead opt for a world in which he or she gained nothing. We admit that the issue of opt-out rights has more salience in cases in which at least some class members have viable individual claims. But even in negative-value instances, the scope of opt-out rights matters in a range of situations.

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70 *See* Fed. R. Civ. P. 23(b)(3) (stating that a class action must be "superior to other available methods for fairly and efficiently adjudicating the controversy").

71 *See id.* 23(b)(3)(A)–(D) (listing four factors to be used in determining superiority, including manageability); *In re* Bridgestone/Firestone, Inc., 288 F.3d 1012, 1018–20 (7th Cir. 2002) (relying principally on a lack of manageability to reverse a decision granting class certification).

72 Fed R. Civ. P. 23(b)(1)–(2). Some courts have held that Rule 23(b)(2) requires a finding that the class is sufficiently "cohesive." *See In re* St. Jude Med., Inc., 425 F.3d 1116, 1121 (8th Cir. 2005); Barnes v. Am. Tobacco Co., 161 F.3d 127, 142–43 (3d Cir. 1998); *cf. In re* Welding Fume Prods. Liab. Litig., 245 F.R.D. 279, 315, 315 n.189 (N.D. Ohio 2007) (noting that "whether there is an implicit cohesiveness requirement within Rule 23(b)(2) is not settled within this Circuit" and citing cases on both sides of the issue); New Motor Vehicles Canadian Exp., No. MDL 1532, 2006 WL 623591, at *9–10 (D. Me. 2006) (requiring and finding class cohesiveness for antitrust claims seeking a classwide injunction). Some courts have also held that Rule 23(b)(2) contains a finding that the class be manageable. *See* Shook v. El Paso Cnty., 386 F.3d 963, 973 (10th Cir. 2004) ("Elements of manageability and efficiency are not categorically precluded in determining whether to certify a [Rule] 23(b)(2) class."); Lowery v. Circuit City Stores, Inc., 158 F.3d 742, 758 n.5 (4th Cir. 1998), *vacated on other grounds*, 527 U.S. 1031, *on remand*, 206 F.3d 431 (4th Cir. 2001) (holding "that in appropriate circumstances a district court may . . . deny certification if the resulting class action would be unmanageable or cumbersome"). Other courts disagree. *See* Forbush v. J.C. Penney Co., 994 F.2d 1101, 1105 (5th Cir. 1993) ("[Q]uestions of manageability and judicial economy are . . . irrelevant to [Rule] 23(b)(2) class actions."); *see also* Dukes v. Wal-Mart Stores, Inc., 603 F.3d 571, 614–15 (9th Cir.) (en banc), *cert. granted*, 79 U.S.L.W. 3128 (U.S. Dec. 6, 2010) (No. 10-277) (importing a manageability analysis into Rule 23(a) in a massive Rule 23(b)(2) class action); *id.* at 617 (discussing manageability issues in connection with Rule 23(b)(2)).

First, some class members might be risk-averse or lack adequate information, and thus wish to opt out even when the benefits they can expect from class treatment exceed the costs.[73] Second, it is possible for a class to contain members who benefit less from class treatment than the class action benefits from them.[74] In most circumstances, these individuals should be excluded from class membership.[75] Because writing a class definition that excludes these members might be difficult, an alternative solution to achieve exclusion is to give class members the ability to opt out, on the theory that each member is in the best position to realize the benefits and losses from class treatment.

A third reason to consider opt-out rights in negative value cases is to put pressure on class counsel and the class representative to structure a fair and optimal class. This concern has two aspects. First, until now, we have considered only the question of optimal class size on the assumption that a class action yields a given amount of benefit to its members.[76] But it is possible that another competing class action might yield a higher benefit. For example, perhaps another lawyer is more skilled or more efficient, so that the class action this other lawyer proposes to maintain yields a higher benefit (in effect, raising the marginal benefit lines MB_1 or MB_2 in Figures 1–11). Allowing members to opt out of the present class action can put competitive pressure on class counsel to make sure that the present class action is indeed the most beneficial for class members.[77]

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73 *Cf.* Debra Lee Bassett, *Implied "Consent" to Personal Jurisdiction in Transnational Class Litigation*, 2004 MICH. ST. L. REV. 619, 639–40 (arguing that foreign class action members should have opt-in rights because there are many factors, such as fear and misunderstandings, which might dissuade those potential members from taking part in the class action).

74 For this demonstration, see *supra* text accompanying Figures 6, 9, 11; *supra* notes 63–65 and accompanying text. One view of constitutionally adequate representation requires that class members be made no worse off than they would have been had they either chosen to file an individual suit or instead chosen not to sue, whichever decision yielded the greater expected net benefit. But not all cases have adopted this principle, so some negative value class actions might contain members who are affirmatively made worse off by class treatment. *See supra* note 30.

75 Sometimes, however, it is necessary for these class members to remain in the case. For this discussion, see *supra* notes 63–65 and accompanying text.

76 *See supra* Part II.

77 We have assumed in the text that the competitive pressure would come from another class action. Other methods of aggregation are also possible. *See supra* note 19. Although these methods are unlikely to be useful in many negative value suits, we can generalize the claim in the text so that class members should arguably be given the right to opt out whenever *any* alternative form of aggregation (including an alternative class action) promises to yield a greater net benefit.

The second concern is that, even assuming that the present class action yields the highest net benefit to the class, we can hypothesize a situation in which all of the benefit of the class action is concentrated in the hands of the class representative and class counsel, and the class members receive nothing. Because the class members are not worse off than they would be otherwise (as they would never have sued individually), the class action does not necessarily offend the adequacy of representation requirement, even if it offends our sense of equity and fairness.[78] One way to give effect to this sense is to allow class members to opt out of a class when class members perceive that the distribution scheme is unfair, effectively pressuring class counsel and the class representative to structure the class to achieve a more equitable distribution of the remedy.

A fourth, and essential, reason to consider opt-out rights, even in negative value cases, is the Constitution. The Supreme Court has held that, in class actions seeking monetary relief "wholly or predominately," class members who lack contact with the forum enjoy a right to opt out of the class.[79]

Despite these important concerns, our view is that, if a class is an optimal size, and if this class action yields greater net social benefits than other methods of aggregation, no opt-outs should be permitted. Put differently, a class representative who establishes an optimally sized class should be allowed to maintain the class action on a mandatory basis when this class action provides more benefit than other aggregation mechanisms do. The reason is simple: from an efficiency perspective, such a class action yields the greatest social benefit, and permitting departures from this class decreases that social benefit. Absent countervailing considerations (such as litigant autonomy, which is very weak in the negative-value context[80]), there is no reason to adopt a nonefficient opt-out rule.

In making this claim, we do not minimize the arguments for an opt-out right, even in the negative-value context. The first argument—that class members might misperceive the benefits and costs—is the least substantial. Giving people the autonomy to make socially inefficient choices due to their own erroneous perceptions seems justi-

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78 *See* Tidmarsh, *supra* note 30, at 1190–94. For an argument that an inequitable concentration of benefits might violate the adequacy of representation requirement, see Woolley, *supra* note 30, at 946–47.

79 Phillips Petrol. Co. v. Shutts, 472 U.S. 797, 811 n.3 (1985); *see also id.* at 811–12; *supra* note 4.

80 On the nature of litigant autonomy and the effect of class actions on that autonomy, see Tidmarsh, *supra* note 30, at 1140–51.

fiable only on a strong notion of liberty or autonomy. But given that the autonomy will be exercised in favor of doing nothing (because no individual who opts out will sue[81]), and given that nothing is expected of the class member in the class action,[82] it seems no great infringement on absent class members to remain in the class when doing so benefits other class members and (as long as they expect to receive some positive benefit from the class action) themselves as well.

The second reason to permit an opt-out right—the desire to remove putative class members for whom the costs of litigation are greater than the benefits they receive—is more powerful. Like many marginal utility calculations, the formulas for determining optimal class size require significant member-specific information that is difficult to obtain in the real world, especially at the certification stage. Therefore, there is appeal in the notion that the class definition should sweep broadly, put the onus on individual class members to decide if the class action is worth it, and let the class members for whom the cost-benefit calculus is negative opt out. In essence, providing an opt-out right puts the decision about class membership into the hands of the persons with the best information about whether class membership makes sense.[83]

Unfortunately, this notion is unworkable in practice. To begin, it is not obvious that individual class members have better information about the benefits of the class action or its ultimate costs. Nor is there a guarantee that only the "right" class members—those whose costs exceed benefits—will opt out: those who believe erroneously that they will receive no benefits from class treatment might also opt out, and some who should opt out might not. Next, an opt-out right creates the possibility of strategic behavior, in which some parties who stand to gain from class treatment nonetheless opt out (or threaten to do so) to

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81 It is in theory possible that a person will misperceive both the value of remaining in the class action (believing that the net benefit will be negative) and the value of an individual suit (believing that the net benefit will be positive). This person will both opt out and bring suit. Because such a suit is worthless in fact, there is little social value in allowing it to be brought in a court system that many already regard as too clogged and, therefore, little reason to honor the person's right to opt out just to vindicate the autonomy to act based on a doubly erroneous view of the world.

82 *See Shutts*, 472 U.S. at 810 ("Unlike a defendant in a normal civil suit, an absent class action plaintiff is not required to do anything. He may sit back and allow the litigation to run its course, content in knowing that there are safeguards provided for his protection.").

83 *Cf.* GUIDO CALABRESI, THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS 135, 139 (1970) (arguing that one factor to be considered in imposing liability is the cheapest cost avoider).

extract rents from members remaining in the class.[84] Moreover, in some cases, an optimally sized class must include class members whose costs exceed their benefits;[85] extending an opt-out right to these class members discourages formation of an optimally sized class.

Finally, a court possesses alternatives that make it less necessary for "losing" class members to remove themselves. The court can apply a rough presumption to determine the optimal class size.[86] In addition, a court might require the class representative who requests class certification to sample the class (especially those whose benefit is likely to be smallest—in other words, those who approach n in Figures 7–11) and to determine whether significant numbers of class members are likely to be "losers" (i.e., people whose costs from class treatment exceed their benefits).[87] This information can help the court and class counsel to construct a class definition that excludes individuals who possess the characteristics of the "losers" or, when appropriate, to construct a plan to spread the losses of the "losers" across the "winners."[88] Most controversially, a court could allow "losers" to attack the judgment collaterally.[89]

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84 *See generally* Michael A. Perino, *Class Action Chaos? The Theory of the Core and an Analysis of Opt-Out Rights in Mass Tort Class Actions*, 46 EMORY L.J. 85, 108–19 (1997) (discussing the ways in which coalitions of class members can disrupt a beneficial class action).

85 *See supra* notes 63–65 and accompanying text. These are the class members between g_3 and g_4 in Figures 10 and 11.

86 *See supra* text following note 67.

87 The sampling of class members to determine the characteristics of their claims is not an uncommon practice. *See* Smith v. Lowe's Home Ctrs., Inc., 236 F.R.D. 354, 357–58 (S.D. Ohio 2006); *In re* Airline Ticket Comm'n Antitrust Litig., 918 F. Supp. 283, 288 (D. Minn. 1996). The "losers" to whom we refer are the class members from g_1 to n in Figure 6, g_2 to n in Figure 9, g_3 to g_4 in Figures 10 and 11, and g_5 to n in Figure 11.

88 As we have previously described, loss spreading is an efficient strategy only with respect to class members between g_3 to g_4 in Figures 10 and 11. *See supra* notes 63–65 and accompanying text. For all of the other "losers" mentioned *supra* note 87, loss spreading is an inefficient solution. *See supra* notes 52–55 and accompanying text.

89 The capacity of disappointed class members to attack a class judgment or settlement collaterally is a much debated subject. *Compare* Stephenson v. Dow Chem. Co., 273 F.3d 249, 261 (2d Cir. 2001) (permitting collateral attack, albeit not in a negative value case), *aff'd in part by an equally divided Court and vacated in part*, 539 U.S. 111 (2003), *with* Samuel Issacharoff & Richard A. Nagareda, *Class Settlements Under Attack*, 156 U. PA. L. REV. 1649, 1658–59 (2008) (generally arguing against collateral attack when the court in the first case determines that the class's representation was adequate). The *Principles* also take a narrow view of collateral attacks. *See* PRINCIPLES OF THE LAW OF AGGREGATE LITIG. § 3.14 (2010). In our judgment, should collateral attacks be permitted, the inquiry should be limited to considering whether the expected (or ex ante) benefits were less than expected (or ex ante) costs at the time of certification and (if applicable) settlement. We would not consider the ex post results of the class action, at least in the absence of strategic behavior by class counsel or the class representative to throw the costs onto some class members.

The third reason to permit an opt-out right—the need to put competitive pressure on class counsel to structure the most beneficial aggregation scheme and to fairly distribute benefits among class members—is also powerful. In our judgment, however, permitting an opt-out right is a poor way to address these concerns. As for ensuring that aggregation occurs in the way most beneficial to society, the superiority requirement in Rule 23(b)(3) class actions gives the courts room to reject the certification of a class action that delivers less benefit than another class action or another aggregation device.[90] Superiority is not an element of Rule 23(b)(1) and (b)(2) class actions, at least in a formal sense, although some courts have undertaken comparable inquiries.[91] An analysis of the superiority of a particular class action to other aggregation devices—an analysis that must consider the optimal size of the class—is a better way to ensure optimal aggregation than the indirect method of relying on opt-outs. Indeed, given the historically low rate of opt-outs[92] and the negative-value nature of the claims, an opt-out right is unlikely to have a substantial deterrent effect on the behavior of class counsel and class representatives who fail to achieve optimal aggregation. Therefore, permitting an opt-out right seems more likely to foster illegitimate rent extraction than to put legitimate pressure on class representatives and class counsel to structure an optimal aggregation scheme.

Likewise, allowing class members to opt out as a means of preventing class counsel and class representatives from unfairly distributing benefits within the class is also a fitful and indirect approach to a problem for which a direct and readily available method is more effective. Unfair distributions are most likely to arise in settlements, especially settlements of monetary claims.[93] But judges must approve all class action settlements, and to do so they must find that the settlement is "fair, reasonable, and adequate."[94] Judicial disapproval of unfair settlements is by far a better deterrent for preventing inequitable distributions than allowing an opt-out right, especially in negative-value cases. Opting out is a symbolic protest unless enough class members opt out that a new class action can then commence—a most unlikely scenario.

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90 *See supra* note 70 and accompanying text.

91 *See supra* note 72.

92 *See supra* note 8.

93 *See, e.g.*, Ortiz v. Fibreboard Corp., 527 U.S. 815, 855–56 (1999) (rejecting a class action settlement in part because of the unfairness of the distribution).

94 FED. R. CIV. P. 23(e)(2).

The final argument for a right to opt out is the constitutional one. Our analysis has focused on the economics of optimal class action aggregation and has arrived at the unsurprising conclusion that class members should not be allowed to opt out when doing so results in a class action that is less efficient due to its suboptimal size. This analysis casts a new light on the "*Shutts* problem": in other words, on the precise scope of the due process right of class members without forum contacts to opt out of class actions "wholly or predominately" seeking damages.[95] The Due Process Clause is susceptible to an economic interpretation, in which the government can deprive individuals of their adversarial rights when the benefits of a nonadversarial process outweigh the risks of an erroneous deprivation.[96] By analogy, a court should be able to deprive a class member of a right to pursue an individual remedy that is worth nothing when the social benefits are greater. Indeed, *Shutts* did not necessarily involve a class of optimal size—the Kansas state courts in *Shutts* never conducted such an analysis,[97] nor did the Supreme Court[98]—so *Shutts* had no occasion to decide whether an opt-out right exists in an optimally sized class.

We recognize that this argument is perhaps too clever by half. The personal jurisdiction branch of the Due Process Clause, on which *Shutts* based its holding,[99] has always proven somewhat impervious to arguments grounded in efficiency.[100] By positing a class action that yields the greatest social benefit, however, we put *Shutts* in its least appealing light: why should a class member who gains nothing by opting out be allowed to do so and thereby harm the interests of the class as a whole?

IV. Optimal Class Size and Indivisible Remedies

There is much to like in the *Principles*' functional approach to analyzing opt-out rights. Similarly, there is much to be intrigued about in the *Principles*' distinction between indivisible remedies, for which no opt-out right needs to be afforded, and divisible remedies,

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95 *See supra* note 4 and accompanying text.

96 *See* Mathews v. Eldridge, 424 U.S. 319, 335 (1976).

97 *See* Shutts v. Phillips Petrol. Co., 679 P.2d 1159 (Kan. 1984).

98 *See* Phillips Petrol. Co. v. Shutts, 472 U.S. 797 (1985).

99 *See id.* at 807.

100 *See* World-Wide Volkswagen Corp. v. Woodson, 444 U.S. 286, 291–92, 297 (1980) (creating a two-prong personal jurisdiction test, one dependent on whether a defendant "purposefully avails itself of the privilege of conducting activities within the forum State" and one based in notions of economy and convenience).

for which an opt-out right is permissible.[101] The *Principles*' basic intuition—that class actions seeking classwide rather than individualized relief should be mandatory in nature—is consistent with our presumption favoring a mandatory class action composed of the entire class when no tailoring of the remedy to individual circumstances is required.

Beyond these common intuitions, however, our disagreements with the *Principles*' approach emerge. The *Principles* do not consider the idea of optimal class size. As a result, the most evident divergence between our approach and the *Principles*' approach surfaces immediately: We believe that opt-out rights are unnecessary and counterproductive when a negative value class is optimally sized. Furthermore, because we also believe that a court should certify only classes of optimal size, we reject the notion that a class action rule should permit an opt-out right.

Our analysis also suggests other difficulties with the *Principles*' approach to mandatory class actions. To begin, the "sameness" of the remedy—the idea on which the *Principles* build their indivisibility analysis[102]—is not a talisman. It is possible to understand "sameness" in two different ways. In one sense, the "same" remedy means a remedy of identical benefit to each class member.[103] In another sense, the "same" remedy means a remedy that gives every class member the same legal right, even though different class members value that right differently.[104] The *Principles* seem to conceive of sameness in the latter sense.[105] But it is important to keep the two meanings separate from each other, at least if we care about the efficient resolution of mass disputes. As we have shown, the analysis of the two situations is similar, but the latter situation raises analytical difficulties in determining the most efficient class action—difficulties to which the *Principles* did not attend.

Moreover, our analysis shows that, when the remedy for all class members is the "same," it is not always appropriate to create a mandatory class composed of all the injured victims. While we agree with the *Principles* that class actions should be mandatory, we have shown that a mandatory class composed of all members can be inefficient. Rather, in some circumstances, a mandatory class of smaller

101 PRINCIPLES OF THE LAW OF AGGREGATE LITIG. § 2.04 (2010).

102 *Id.* § 2.04(b).

103 *See supra* Part II.A.

104 *See supra* Part II.B.

105 *See supra* notes 11–14 and accompanying text.

size is optimal; a mandatory class composed of all class members, which the *Principles* contemplate, is inefficient. On the flip side, we have also shown that, even when a remedy is not the same, there are efficiency gains to be had from mandatory treatment of optimally sized classes.

Simply put, the sameness, or indivisibility, of the remedy has only a glancing relationship to the efficient resolution of mass negative-value claims. True, there is a general correspondence between the individualization of remedies and a class size smaller than the entire class of injured plaintiffs—an intuition that our analysis shares with the *Principles*. In cashing out that intuition, however, the *Principles* fail to attend to the demands of efficiency. The indivisibility approach authorizes mandatory treatment of some classes that are inefficiently large and also authorizes class members to opt out of classes that are operating at their most efficient size. Stating principles for "promoting the efficient use of litigation resources" was one of the main goals of the *Principles*.[106] Our analysis is more consonant with this functional orientation than the *Principles*' indivisibility approach—an approach that is less successful in escaping the gravitational pull of history than it claims.

CONCLUSION

Our analysis demonstrates that optimal class size should be a critical variable in assessing the certification of classes, that determining optimal class size requires an examination of the relationship between marginal benefits and marginal costs for class members, and that an optimally sized class should contain no opt-out right. At present, our analysis is limited to negative value suits. In this context, however, the *Principles* bear a heavier burden than they have thus far carried to explain why their inefficient indivisibility approach should be preferred as a functional matter.

106 *See* PRINCIPLES OF THE LAW OF AGGREGATE LITIG. § 1.03(a) (2010). The other goals were "enforcing substantive rights and responsibilities," *id.* § 1.03(b), "facilitating binding resolutions of civil disputes," *id.* § 1.03(c), and "facilitating accurate and just resolutions of civil disputes by trial and settlement," *id.* § 1.03(d). In addition to better fulfilling the goal of efficient adjudication, our approach, which makes all optimally sized class actions mandatory, better fulfills the goals in sections 1.03(b) and (c), and fares no worse in fulfilling the goal in section 1.03(d).