The Allocation Problem in Multiple-Claimant Representations

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Multiple-claimant representations—class actions and other group lawsuits—pose two principal-agent problems: Shirking (failure to maximize the aggregate recovery) and misallocation (distribution of the aggregate recovery other than according to the relative value of claims). Clients have dealt with these problems separately, using contingent percentage fees to motivate lawyers to maximize the aggregate recovery and monitoring devices (disclosure requirements, client control rights, and third-party review) to encourage appropriate allocations.

The scholarly literature has proceeded on the premise that monitoring devices are needed to police misallocations, because the fee calculus cannot do the entire job. This paper shows that this premise is mistaken and that its consequence has been to misdirect our understanding of the importance of information problems and bargaining costs in attorney-client relationships. In fact, it is relatively straightforward, as a mathematical matter, to design a two-part contingent fee arrangement that incentivizes a lawyer to both maximize the aggregate recovery and allocate it according to relative claim values. The failure of the market for multiple-claimant representations to generate fee arrangements of this type therefore

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reflects the operation of empirical factors, not the inherent limits of contingent fees.

We believe the principal barriers are information and bargaining costs. Two-part contingent fee arrangements require more information than claimants or attorneys are likely to possess and require more expensive negotiations than the monitoring devices the market actually employs. Monitoring devices are thus cheaper substitutes for more refined contingent fee arrangements, rather than unique solutions to allocation issues.

I. INTRODUCTION

Multiple-claimant representations, including mass tort cases, class actions, and other group lawsuits, pose two principal-agent problems. Clients must fear that attorneys will shirk, and they must worry that lawyers will misallocate recoveries. Traditionally, clients have dealt with these concerns separately. They have used contingent percentage fees to motivate lawyers to maximize aggregate recoveries, and they have used a variety of other methods—disclosure requirements, client control rights, third-party review, or some combination thereof, depending upon the context involved—to encourage appropriate division of recovered funds.[1]

The scholarly literature has proceeded on the premise that the foregoing state of affairs is necessary—in particular, that non-fee controls on the allocation of recovered funds are needed because design of the fee calculus cannot do the entire job. In a leading exposition, Bruce Hay contends that optimal contingent fee arrangements cannot simultaneously motivate lawyers to maximize aggregate recoveries and allocate those recoveries appropriately amongst multiple clients. Writing about class actions, Hay argues that an optimal contingent fee, which solves the maximization problem by tying counsel's fee to the aggregate recovery, necessarily leaves counsel indifferent between all possible allocations, because the same percentage must apply to all claimants. When the percentage is level, the lawyer's fee is the same regardless of the manner of allocation. One could eliminate this indifference by having the fee cap vary, but such an approach would encourage the lawyer to allocate the entire recovery to the claimants whose fee percentages were the highest. For this reason, Hay con-

[1] Discussions of means to handle allocation-related problems in mass actions can be found in Charles Silver and Lynn A. Baker, *I Cut, You Choose: The Role of Plaintiffs' Counsel in Allocating Settlement Proceeds*, 84 Va L Rev 1465 (1998); Charles Silver and Lynn A. Baker, *Mass Lawsuits and the Aggregate Settlement Rule*, 32 Wake Forest L Rev 733 (1997).

cludes, "the optimal fee cap will do no better than ensure that the class as a whole receives in settlement the value of its claims. It cannot solve distributional problems within the class."[2]

Hay's stance rests on the premise that an optimal fee formula is *inherently* unable to handle the allocation problem. We think that this premise is mistaken and that its consequence has been to misdirect the debate over the allocation problem. The interesting question is not how to construct some method other than the fee calculus to address the allocation problem but, rather, why the market for legal representation in the multiple-claimant context has not gravitated toward the kind of fee calculus that would provide lawyers with the incentive both to maximize the aggregate recovery and to allocate it appropriately. In this article, we show that the barrier to use of a fee calculus to advance both goals is one not of technical design but, rather, of information.

In Part II, we frame the allocation problem, initially explaining why a lawyer might allocate an aggregate recovery in some manner other than according to the relative value of the claims resolved and thereafter turning to the methods currently used to address the allocation problem. In Part III, we challenge directly the premise of the current literature by presenting a method of fee calculation that both motivates lawyers to maximize aggregate recoveries and encourages them to allocate those recoveries according to the relative value of the claims resolved. We show, in short, that it is relatively straightforward, as a mathematical matter, to design a fee calculus to do what the current literature believes cannot be done simultaneously.

In Part IV, we generalize this method and, in Part V, we address its implications. Most significantly, the optimal fee design turns upon the assumption that parties have complete information about the relative value of their claims. The realism of this assumption clearly is open to challenge in the market for multiple-claimant representation. Knowledge of claim values varies greatly and often is incomplete. Still, even when the assumption is inaccurate, as it virtually always is, clients confront an information problem, not an inherent limitation in the design or flexibility of contingent fee arrangements. Client control rights, disclosure requirements, third-party review, and other methods of addressing the allocation problem therefore are best understood as market responses to *information* shortages—responses more efficient than the negotiation process that would be needed to implement a fee calculus along the lines we derive—rather than as measures that respond to inherent limitations in contingent fees. A brief conclusion follows.

[2] Bruce L. Hay, *The Theory of Fee Regulation in Class Action Settlements*, 46 Am U L Rev 1429, 1472 (1997).

II. THE ALLOCATION PROBLEM UNDER CURRENT LAW

In this article, we start from the premise that contingent percentage fees are capable of providing lawyers for multiple claimants with appropriate incentives to maximize the aggregate recovery for such persons.[3] The precise details and operations of contingent percentage fees in this regard are the subject of a substantial literature.[4] We put aside those micro-level details here in order to focus attention on the relationship between contingent percentage fees and the allocation of the aggregate recovery amongst the implicated claimants.

We posit misallocation to consist of the allocation of the aggregate recovery in a manner other than according to a reasoned understanding on the lawyer's part of the relative value of the underlying claims. In a given area of civil litigation, the "value" of claims may be a function of many different factors. Some claimants among those jointly represented by a given lawyer might face statute-of-limitations problems, whereas others might not. Some or all claimants might face obstacles with regard to particular elements of their cause of action against the defendant—in the mass tort context, for example, difficulty in proving the existence of a causal relationship between the defendant's product and the diseases from which some or all claimants suffer. For purposes of clear exposition in subsequent parts of this article, we posit a comparatively streamlined situation in which the relative value of claims turns simply upon their relative damages. Our argument, however, does not depend upon such a stylized rendering of claim value. The equating of claim value with damages simply enables us to separate the allocation problem from the distinct challenges that a lawyer might face in collating—if only in a rough, back-of-the-envelope way—multiple considerations that might bear upon expected claim value.[5]

The important question to ask in framing the allocation problem is: Why might a lawyer with appropriate incentive to maximize the aggregate recovery nonetheless misallocate that recovery? Here, one must distinguish between two contributing sources: The first con-

[3] By making this assumption, we do not mean to imply that contingent percentage fee arrangements align the interests of principals and agents perfectly. They do not. See text accompanying and sources cited in note 16.

[4] On the economics of contingent fees, see, e.g., Albert H. Choi, *Allocating Settlement Authority under a Contingent-Fee Arrangement*, 23 J Legal Stud 585 (2003); Rudy Santore and Alan D. Viard, *Legal Fee Restrictions, Moral Hazard, and Attorney Rents*, 44 J L & Econ 549 (2001); Bruce Hay, *Contingent Fees and Agency Costs*, 25 J Legal Stud 503 (1996).

[5] As long as the relative sizes of the damages are the same as the relative sizes of the value of the claim, it makes no difference which one we use for purposes of our fee design.

sists of sheer randomness arising from lawyer indifference; the second stems from lawyer incentives that arise from matters aside from her fee from the client for the particular representation.

In Hay's formulation, there is no "incentive" to misallocate, properly understood. Rather, misallocation will occur simply because the lawyer, having maximized the aggregate recovery per the applicable contingent percentage fee, has no economic reason to care how the recovery is allocated. The lawyer, in short, will be indifferent as among possible allocations and, as such, would be expected to allocate randomly.[6] If the allocation in a given instance happens to correspond to the relative value of claims, that is simply the result of random variation.

Other considerations, distinct from the fee to be gained from the client, may provide the lawyer with an affirmative incentive to misallocate. In the settlement context, the defendant may condition its agreement to settle upon the allocation of the recovery by the plaintiffs' lawyer in a particular manner unrelated to relative claim value—for instance, in the context of commercial or consumer litigation involving multiple claimants, an insistence that the allocation benefit claimants with whom the defendant has ongoing business relations over claimants who are otherwise similar but who are no longer transacting business with the defendant.[7]

Misallocation might also stem from the mixture of arrangements by which multiple claimants have come to be represented by a common lawyer. The lawyer may be obligated to pay a "forwarding fee" or "referral fee" with regard to the claimants referred to her by others but to pay no such fee as to claimants that she obtained herself. As a result, the lawyer would have an incentive, at the margin, to misallocate in favor of those claimants as to whom no fee must be paid.[8]

[6] See Hay, 46 Am U L Rev at 1471 (cited in note 2). Like Hay, we put aside for the moment the ethical strictures that might lead the lawyer to avoid misallocation, even where it would serve her economic interests.

[7] See, e.g., John C. Coffee, Jr., *Conflicts, Consent, and Allocation After* Amchem Products—*Or, Why Attorneys Still Need Consent to Give Away Their Clients' Money*, 84 Va L Rev 1541, 1545 (1998) ("[E]ven if the plaintiffs' attorney is neutral as to the various subgroups within the class, the attorney still has no incentive to resist an allocation plan favored by the defendant, who often has an interest in preferring one subgroup within the class over another.").

[8] See Howard M. Erichson, *Beyond the Class Action: Lawyer Loyalty and Client Autonomy in Non-Class Collective Representation*, 2003 U Chi Legal F 519, 572. A recent dispute between law firms in mass tort litigation over the diet drug combination fen-phen illustrates the potential for misallocation when a law firm settles multiple cases, some recruited by the settling firm itself and some obtained from another firm through a referral arrangement. There, the referring firm sued the firm receiving the referrals, alleging that the latter had allocated the proceeds of aggregate settlements in such a manner as to reduce the payment to the former for the cases it referred. See *Parker & Waichman v Napoli et al*, No. 065388/01 (NY Sup Ct Dec. 2, 2004), available at http://decisions.courts.state.ny.us/fcas/FCAS_docs/2004DEC/30060538820013SCIV.PDF;

Another incentive for misallocation may arise from the lawyer's desire to enhance her credibility in the recruitment of future clients in the same area of litigation. One criticism leveled against multiple-claimant representations in asbestos litigation, for instance, is that they tend, when settled in aggregate, to overpay claimants without present-day physical impairments and to underpay claimants with severe asbestos-related disease.[9] Such a misallocation nonetheless may enhance the credibility of the lawyer in the subsequent recruitment of additional unimpaired claimants, persons likely to be greater in absolute number than those with asbestos-related disease at a given time.[10] A related consideration, both in the mass tort context and elsewhere, consists of differing attitudes toward risk on the part of the claimants themselves. Persons with high-dollar-value claims or who might die soon may be more likely to settle cheaply, relatively to the expected value of their claims in the event of trial.[11]

How does the law currently address the possibility of misallocation, whether out of indifference or affirmative incentive? Client control rights entitle clients to reject offers that pay them less than they want.[12] In single-client representations, these control rights enable claimants to guard against shirking by their agents, which may occur because even an optimal contingent fee arrangement fails to align perfectly the interests of client and lawyer. In multiple-claimant litigation, the right to reject a settlement also affords a client a degree of protection against misallocation when a group-wide settlement offer is received. A client who believes that a claim is worth more than her assigned portion of a group-wide deal can reject the offer and insist on going to trial. The effect, as Howard Erichson has noted, is to make the would-be settling *defendant* care not merely about the aggregate amount of the settlement but also about whether its allocation is sufficiently appealing to each claimant as to induce her to

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Jonathan Glater, *When Law Firms Collide, Things Sometimes Get Ugly*, NY Times C2 (Feb 12, 2005).

[9] See, e.g., *Fairness in Asbestos Compensation Act of 1999: Hearing on H.R. 1283 Before the House Comm. on the Judiciary*, 106th Cong. 33 (2000) (statement of Professor Christopher F. Edley, Jr., Harvard Law School). This tendency intertwines in the asbestos context with the willingness of some courts to consolidate for trial both impaired and unimpaired claimants, a procedural move thought to increase the settlement value of the latter. See id at 97-99 (statement of Professor William N. Eskridge, Jr., Yale Law School).

[10] See Michelle J. White, *Resolving the "Elephantine Mass,"* Regulation 48 (Summer 2003) ("In order for representing asbestos claimants to be profitable business, plaintiffs' law firms must be able to obtain compensation for unimpaired claimants.").

[11] Charles Silver, *Merging Roles: Mass Tort Lawyers as Agents and Trustees*, 31 Pepp L Rev 301, 310 (2004).

[12] On a client's right to control settlement, see Restatement (Third) of the Law Governing Lawyers § 22(1) (2000).

accept.[13] The plaintiffs' attorney also acquires an interest in allocating the fund in a manner calculated to elicit favorable reactions from clients. This may be so for two reasons. First, agreements governing mass settlements typically contain walk-away provisions that require participation by large numbers of plaintiffs. Rejections by large numbers of clients can kill deals, costing attorneys their fees. Second, high participation levels may increase attorneys' returns on their sunk investments in negotiations. At the margin, every client who accepts his or her share of a group-wide deal provides an additional increment in fees that comes at little cost to the plaintiffs' attorney, once the terms of the deal have been inked.

Disclosure requirements—which arise under agency law, the law governing lawyers, and, in particular, the aggregate settlement rule—also help clients police misallocations. Agency law and the law governing lawyers require attorneys to tell clients everything they reasonably need to know to make informed decisions on matters relating to a representation.[14] The aggregate settlement rule, a creature of legal ethics that applies to multiple-client representations, particularizes this obligation.[15] The rule requires a lawyer to give each client access to information about the nature of other clients' claims and the amounts other clients are to receive. On the theory that an educated client can more easily identify and object to a misallocation than an ignorant one, disclosure requirements make misallocations less likely.

Special masters and judges may improve allocations by removing attorneys from the process or by subjecting attorneys' recommendations to independent review. In mass actions, special masters are employed to avoid charges of favoritism that might otherwise be leveled against attorneys. In class actions, Federal Rule of Civil Procedure 23(e), which serves as an at-law contract between principals who cannot readily bargain among themselves, requires judicial review of settlements. In both contexts, use of neutral third parties is thought to make appropriate allocations more likely.

The premise of the current literature is that each of the foregoing measures arises from the impossibility of using contingent percentage fees to police simultaneously the problem of recovery maximization and the problem of allocation. As we now show, this premise is false.

[13] See Erichson, 2003 U Chi Legal F at 572-73 (cited in note 8).

[14] See Restatement (Second) of Agency § 381 (1958) (subjecting an agent to a duty to "give his principal information which is relevant to affairs entrusted to him and which, as the agent has notice, the principal would desire to have and which can be communicated without violating a superior duty to a third person"); Restatement (Third) of the Law Governing Lawyers § 20 (requiring a lawyer to "explain a matter to the extent reasonably necessary to permit the client to make informed decisions").

[15] See Model Rules of Professional Conduct Rule 1.8(g) (2004).

III. USING CONTINGENT FEES TO ADDRESS BOTH MAXIMIZATION AND ALLOCATION PROBLEMS: AN EXAMPLE

Suppose an attorney represents two clients, A and B. The clients' claims are identical except that A's damages are twice as great as B's. Assume further that the market rate for legal services is 30% of the money recovered. A sizable literature demonstrates that this traditional contingent fee arrangement will not align the interests of the principals and their agent perfectly.[16] Even so, plaintiffs most often use contingent fee arrangements when retaining attorneys, and these arrangements often best suit their needs. We therefore use the 30% fee as the baseline for our analysis. Nothing depends on the choice of the 30% level, as we show in Part IV. Moreover, depending on the exact nature of an alternative fee arrangement, it may be possible to extend our method of dealing with the allocation problem to the alternative fee structure.

Our goal is to set the fee for the attorney in such a way as to accomplish three objectives. First, we want to provide an incentive for the attorney to seek the largest settlement possible, i.e., the fee should be an increasing function of the value of the settlement.[17] Second, we want to provide an incentive for the attorney to allocate the proceeds of the settlement so that A receives twice as much as B. That is, we want the fee to be at its maximum when the allocation of the proceeds is correct. Finally, we want the attorney to be awarded 30% of the proceeds if she meets the goal of allocating the proceeds correctly.

To meet all of these objectives we propose that the fee awarded to the attorney (F) be computed according to the formula

[16] See, e.g., Murray L. Schwartz and Daniel J.B. Mitchell, *An Economic Analysis of the Contingent Fee in Personal-Injury Litigation*, 22 Stan L Rev 1125 (1970); Patricia Munch Danzon, *Contingent Fees for Personal Injury Litigation*, 14 Bell J Econ 213 (1983); Geoffrey Miller, *Some Agency Problems in Settlement*, 16 J Legal Stud 189 (1987); Terry Thomason, *Are Attorneys Paid What They're Worth? Contingent Fees and the Settlement Process*, 20 J Legal Stud 187 (1991); James D. Dana, Jr. and Katherine E. Spier, *Expertise and Contingent Fees: The Role of Asymmetric Information in Attorney Compensation*, J L, Econ, & Org 349 (1993); Hugh Gravelle and Michael Waterson, *No Win, No Fee: Some Economics of Contingent Legal Fees*, 103 Econ J 1205 (1993); Daniel Rubinfeld and Suzanne Scotchmer, *Contingent Fees for Attorneys: An Economic Analysis*, 24 RAND J Econ 343 (1993); Bruce L. Hay, *Contingent Fees and Agency Costs*, 25 J Legal Stud 503 (1996); Winand Emons, *Expertise, Contingent Fees, and Insufficient Attorney Effort*, 20 Int'l Rev L & Econ 21 (2000); A. Mitchell Polinsky and Daniel Rubinfeld, *Aligning the Interests of Lawyers and Clients*, 5 Amer L & Econ Rev 165 (2003); Alon Klement and Zvika Neeman, *Incentive Structures for Class Action Lawyers*, 20 J L, Econ, & Org 102 (2004); Winand Emons, *Conditional Versus Contingent Fees*, University of Bern Discussion Paper No. 04.08, available at http://ssrn.com/abstract=550301 (May 24, 2004).

[17] As we just noted, while providing an incentive to the lawyer, our fee structure may or may not prevent the lawyer from shirking, and thus not maximize the settlement.

$$(1)\quad F = K \times P_A^{2/3} P_B^{1/3}$$

where P_A and P_B are the amounts paid to client A and B, respectively, and the constant K is given by the value

$$(2)\quad \frac{.3}{\left(\frac{2}{3}\right)^{2/3}\left(\frac{1}{3}\right)^{1/3}}$$

The exponents of P_A and P_B are chosen so that given any particular settlement sum, the fee is maximized when P_A is twice P_B. The value of K is chosen so that the fee earned when the proceeds are distributed so that P_A receives twice the amount of P_B is exactly 30% of the total proceeds.[18]

Figure 1 illustrates the impact of the fee formula for all possible allocations between A and B of a $300 settlement fund. We have graphed the fee F as a function of P_A. The fee is maximized when P_A is $200, or 2/3 of the total settlement. The value of the fee is then $90, or 30% of the $300 fee. Any division other than ($200, $100) produces a smaller fee for the attorney.

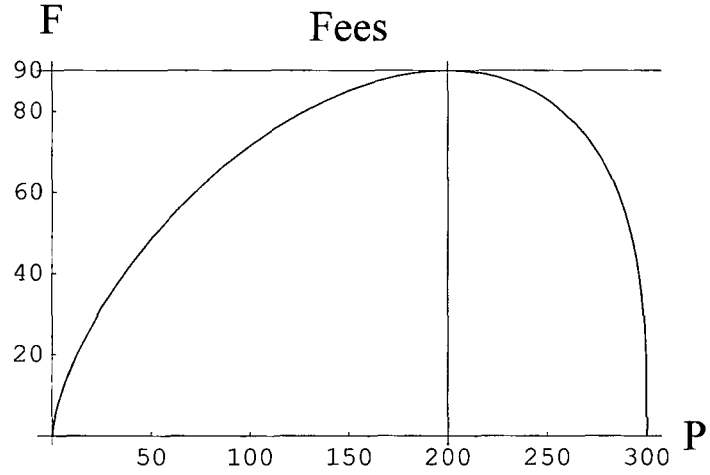

Figure 1

Obviously, any recovery smaller than $300 would also reduce the fee. If a $300 recovery was available but the attorney was to "leave money on the table," the fee would decline. Thus, a $270 recovery would yield

[18] This will become evident from the calculations in the next section. In particular, see equation 8 *infra*.

a maximum possible fee of only $81, which the attorney would generate by dividing the recovery ($180, $90) between A and B. Given the assumption that 30% is both the prevailing market rate and the optimal fee, it efficiently reduces the likelihood of underperformance.

IV. GENERALIZING THE ANALYSIS

It is a standard application of calculus to see that the pattern described in Part III will always hold when fees are set according to the identified formula. Suppose the value of the settlement is S. If A receives P_A then B receives $S - P_A$. The fee received by the attorney is then

$$(3)\quad F = K \times P_A^{2/3}(S - P_A)^{1/3}.$$

The attorney will want to choose P_A so that F is maximized. In order to calculate that value, we need to compute the derivative of F as a function of P_A which turns out to be

$$(4)\quad \frac{dF}{dP_A} = \frac{2}{3} \times K \times P_A^{-1/3}(S - P_A)^{1/3} - \frac{1}{3} \times K \times P_A^{2/3}(S - P_A)^{-2/3}.$$

The maximum for F will be the value of P_A for which this derivative is 0.[19] Setting the derivative equal to 0 and solving for P_A leads us to

$$(5)\quad \frac{2}{3} \times K \times P_A^{-1/3}(S - P_A)^{1/3} = \frac{1}{3} \times K \times P_A^{2/3}(S - P_A)^{-2/3}.$$

If we multiply both sides of this equation by the quantity , we get

$$(6)\quad 2 \times (S - P_A) = P_A$$

which implies that

$$(7)\quad 2 \times S = 3 \times P_A.$$

and hence $P_A = 2/3S$ when the fee is at its maximum. That is, the attorney will maximize her fee by allocating two-thirds of the settlement to A and one-third to B. The value of the fee at that allocation is

$$(8)\quad F = K \times \left(\frac{2}{3}S\right)^{2/3}\left(\frac{1}{3}S\right)^{1/3} = \frac{.3}{\left(\frac{2}{3}\right)^{2/3}\left(\frac{1}{3}\right)^{1/3}} \times \left(\frac{2}{3}S\right)^{2/3}\left(\frac{1}{3}S\right)^{1/3} = .3 \times S,$$

[19] Technically we should also check that the second derivative at this value is negative in order to be sure that the critical point is a maximum. The graph in Figure 1 should make clear that the critical point is indeed a maximum. The actual calculation is tedious and so we will leave it as an exercise for the reader.

so if the attorney allocates the money in the optimal way she can recover 30% of the settlement in fees.

This method of assessing fees generalizes to an arbitrary number of clients. As long as one knows (1) the optimal contingent fee percentage (which we assume to be 30%) and (2) the ratio of claim values that one desires to achieve, for reasons of equity or other sorts, one can write a function for the fee that will motivate the attorney to distribute the settlement fund appropriately and thereby maximize the fee. The details appear in the appendix.

Although the formula shows how to compute the attorney's fee, it does not show how responsibility for paying the fee should be allocated among the clients. If the attorney is due a $90 fee for obtaining a $300 settlement and allocating it ($200, $100) between A and B, one could take the entire $90 from A's share or from B's and one could split the sum between them. In settlements involving larger numbers of clients, the fee might exceed any single client's share of the recovery, but even then many options for allocating responsibility would remain.

The most straightforward way to allocate responsibility for the fee is to have each client pay the same proportion of the fee as he or she receives of a total settlement.[20] Thus, a client who receives 25% of a settlement fund would pay 25% of the total fee. In our two-client example, the total settlement is $300, client A receives $200 (66%), and client B receives $100 (33%). The total fee of $90 would be collected as $60 from client A and $30 from client B.

Of course, if the attorney misallocated the recovery, on this approach the clients' contributions would automatically change. If A and B both received $150, for example, the lawyer's fee would be $85.04 and each client would pay half. Importantly, as long as the fee is a function of the total recovery, no inter-principal competition emerges for the services of the agent. Saul Levmore has shown that such a competition arises when a joint agent handles multiple matters that generate different marginal returns on effort for the agent.[21] When an hour spent attempting to sell House 1 generates an expected $2000 in commissions and an hour spent attempting to sell House 2 generates only an expected $500 in commissions, the agent will rationally try to sell House 1. This creates a problem for the owner of House 2, that of monitoring the agent to ensure that House 2 is marketed properly.

[20] This is by no means the only way to allocate the fee. For a brief survey see H. Peyton Young, *Equity in Theory and Practice* 64 (Princeton, 1994).

[21] Saul Levmore, *Commissions and Conflicts in Agency Arrangements: Lawyers, Real Estate Brokers, Underwriters, and Other Agents' Rewards*, 36 J L & Econ 503 (1993).

The two-part contingent fee described here does not foster an interprincipal competition, regardless of how responsibility for paying the fee is apportioned among the clients. This is so because the percentage is level and the claims are aggregated. The lawyer maximizes the fee by maximizing the recovery for all members of the group. This does mean that the lawyer will focus effort and other resources on claims and certain aspects of claims (e.g., damages or causation) that are expected to generate the most "bang for the buck." This will not harm any client, however, because the second part of the contingent fee arrangement will encourage the attorney to allocate the recovery in a manner that benefits all claimants in proportion to the value of their claims. All clients will therefore benefit from their common attorneys' efficient effort to maximize the value of the entire block of claims.[22]

As economists will recognize, our fee function takes the form of a Cobb-Douglas production with constant returns to scale.[23] The constant returns to scale imply that the maximum of the function will be proportional to the size of the settlement. This is not to say that there are no other fee functions with the requisite properties. A Cobb-Douglas production function simply is convenient for our purposes.

To underscore the importance of the recognition that a single contingent fee arrangement may handle both the maximization and the allocation problem, we note the connection between our solution to the allocation problem and Nash's solution to the bargaining problem.[24] In the bargaining problem, a group of claimants must decide how to divide some common property. The utility each claimant gets from any particular amount of the common property is known. The question is what constitutes a "fair" division of this common asset.[25]

[22] The penalty that the attorney faces for misallocating the recovery may be modest and may also decrease as a percentage of the settlement as the number of claimants grows. Because the surface defined by the allocation function is quite flat at the optimum, deviations from it do not alter the fee very much. As long as the attorney is motivated to maximize his fee, the flatness will not make a difference to our analysis. If, however, he is faced with side payments as an inducement to misallocate, then it would be important to understand in more detail how the allocation function behaves away from the optimum point. We will not attempt to do that here. This difficulty arises because of the specific function we propose for the allocation and may not be inherent to the problem of allocation. We thank Pierre Grosdidier for pointing out this subtlety in the analysis.

[23] Robert S. Pindyck and Daniel L. Rubinfeld, Microeconomics 249 (Prentice Hall 5th ed, 2001).

[24] J. Nash, *The Bargaining Problem*, 21 Econometrica 128 (1953). Our discussion will follow the explication of Nash's theory in Young, *Equity in Theory* at 119 (cited in note 20).

[25] The issue in this version of the bargaining problem is solely a prescriptive, theoretical one. We are only concerned with some definition for what constitutes a fair di-

Nash postulated a number of axioms that turn out to characterize a unique division of the asset. He postulated that a "fair" division should be consistent,[26] efficient,[27] impartial,[28] and scale-invariant.[29] He then showed that the only division method that satisfies all these conditions is one that gives each claimant an amount such that the product of all claimants' utilities is maximized.

For example, suppose that two people, A and B, are trying to divide $300, that the utility that A receives from an allocation of P_A dollars is $P_A^{2/3}$, and the utility B receives from an allocation of P_B dollars is $P_B^{1/3}$. The Nash solution to this bargaining problem is the allocation that generates the largest possible product. The computation performed above shows that this allocation gives $200 to A and $100 to B.

One can thus interpret our solution to the allocation problem in the following way: Clients A and B instruct their attorney to divide the settlement for them in a "fair" fashion, where "fair" is interpreted in the sense of Nash and where the clients' utilities from shares in the recovery are directly related to value of their claims. To create an incentive for the attorney to allocate the recovery fairly, her fee is made proportionate to the product of the utilities A and B get from the allocation. By choosing the allocation that maximizes this product of their utilities (the "fair" allocation) the attorney maximizes the fee. We have chosen just the right utility functions so that the allocation will conform to the value of the claim of each client.[30]

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vision given the utility gained by each claimant as measured by his utility function. We are not concerned with a method by which they might achieve this "fair" division or with the empirical question of whether the particular "fair" division that we will discuss is achieved in practice.

[26] Consistent means that the method gives the result to any subset of the claimants if the payments to the others remain fixed. As an example, suppose that when dividing among three claimants a sum of $1000, the method results in an allocation of $300, $500, and $200 to claimants A, B, and C, respectively. Being consistent means that this method will always divide $800 among claimants A and B as $300 and $500 respectively, i.e., the same way that the $800 from the larger amount was divided between A and B, whether or not there are other parties involved.

[27] Efficient means that the entire asset is distributed.

[28] Impartial means that outcome depends only on the utility functions themselves and not on any other feature of the claimant.

[29] Scale-invariant means that the outcome is independent of the units of measurement of the utilities.

[30] We note that there are competing notions of a "fair" allocation that lead to different solutions. The most well-known alternative solution is that of Kalai and Smorodinsky. See E. Kalai and M. Smorodinsky, *Other Solutions to Nash's Bargaining Problem*, 43 Econometrica 510 (1975). Their solution consists of one in which "each claimant is indifferent between his portion and a fixed chance at getting all of the goods." Young, *Equity in Theory* at 120 (cited in note 20). In our hypothetical case, the Kalai-Smorodinsky solution would give claimant A $185.41 and give claimant B $114.59.

V. IMPLICATIONS

Given the theoretical possibility of designing contingent percentage fee formulae to address both maximization and allocation problems, the important question becomes why competitive markets have not produced such arrangements. To anticipate the argument that follows, the principal impediment is that the parties lack the information needed to implement the scheme or, perhaps more precisely, that they find the costs of acquiring the necessary information to be sufficiently high as to content themselves with other methods to address the allocation problem.

In order to implement our solution, each client needs to know the value of her own claim as well as the value of the other clients' claims. The value of a given claim will consist of two parts: the size of the damages incurred by the claimant and a discount factor that accounts for the likelihood that the claim will be successful. This discount factor is related to such things as the quality of the evidence for the claim.

Claimants might have uncertainty about either or both of the parts that comprise the value of their claims. Claimants, however, are likely to be at the greatest informational disadvantage relative to their lawyers with regard to the size of the discount factor, as that is the more likely to entail the subtle evaluation of matters within the lawyer's expertise. Indeed, clients hire lawyers precisely to obtain their *legal* expertise in the valuation of possible claims.

Complete knowledge of both parts of claim value for all claimants would not be necessary for the implementation of our fee scheme, however. The fee structure set forth in Part III turns upon the *relative* value of the claims. Thus, if the discount factor is the same for all claimants—say, because all will encounter the same problems of proof as to the same substantive element of their claims or are subject to the same affirmative defense—then it would not be necessary for claimants to know the *actual* value of their claims in order to define the fee function.[31]

For example, suppose, as in *Abbott v. Kidder Peabody & Co, Inc.*,[32] that numerous investors were persuaded by allegedly fraudulent means to put funds into a partnership, which later became insolvent. To minimize their aggregate litigation costs, the investors might form a multiple-claimant group. When doing so, they would want to en-

[31] A small example will illustrate this fact. Suppose that, in our original example, client A suffers damages D_A, client B suffers damages D_B, and the discount factor is p. Then A's claim relative to B's is pD_A/pD_B which is the same as D_A/D_B. So, if we know the damages then we can compute the fee even if we do not know the discount factor, as long as we are confident that the same discount factor applies to all of the claims.

[32] *Abbott v Kidder Peabody & Co, Inc*, 42 F Supp 2d 1046 (D Colo 1999).

courage their attorneys to maximize the aggregate recovery. They also might want to plan for the allocation of the recovery in advance, as joint venturers in speculative undertakings usually do. The only obvious difference between individual investors being the amounts they lost, the two-part contingent fee formula might suit their needs.

To our knowledge, however, even sophisticated clients like those in *Abbott* do not use two-part contingent fee agreements. Instead, they combine level contingent fee arrangements, which provide attorneys with an incentive to maximize aggregate recoveries, with other mechanisms that enable them to police settlement allocations. The other mechanisms include allocation formulas, client control rights, disclosure requirements, special masters, and judicial review, along the lines discussed in Part II.[33]

In *Abbott* specifically, the plaintiffs established an allocation formula. When hiring their common lawyers, they appointed a steering committee of lead plaintiffs and authorized the lawyers to settle their individual claims "on the same terms as those applicable to the personal claims of the steering committee members."[34] Variations in settlement payments across plaintiffs would reflect the differing amounts of money the clients invested.

Why are other mechanisms used to address allocation problems instead of two-part contingent fee arrangements? The obvious explanation is that they are more efficiently deployed. Consider *Abbott* again. Because the clients' claims differed only in size and size was transparent to all concerned, the clients could have used a two-part contingent fee formula to encourage their common attorneys to allocate the recovery correctly. However, the part of the formula relating to the allocation would have had to contain a variable for each client to reflect that client's fractional share of the aggregate claim. The formula would also have had to change as new clients joined the group or old ones left. Given the transparency of claim size, it was easier for the clients to agree that any recovery would be allocated according to the amount invested than to bother with this.

Our observation is of general importance. In theory, two-part contingent fee formulas can solve both maximization and allocation problems when claim values can be established objectively. However, when this condition is met, allocation formulas, disclosure requirements, and client control rights are all likely to be cheaper alternatives that work roughly as well.

Other means of handling allocation problems are also likely to be

[33] See Silver and Baker, 84 Va L Rev 1465 (cited in note 1); Silver and Baker, 32 Wake Forest L Rev 733 (cited in note 1).

[34] *Abbott*, 42 F Supp 2d at 1049 (cited in note 32).

more efficient when clients cannot verify claim values objectively or lack information about claim values for other reasons. Using a two-part contingent fee arrangement in this situation would require extensive bargaining up-front, expending resources that might be conserved. It would also leave the final allocation on a subjective footing and, therefore, would not obviously be superior to an allocation negotiated or agreed to at the end of litigation.

To frame the responses to the allocation problem in current law in terms of their relative efficiency, moreover, is not to suggest that the status quo deploys optimally all possible responses. One line of commentary on class actions, for example, highlights the limitations upon thoroughgoing judicial review of the allocations made in class settlements. This literature points to expanded use of opt-out rights as a superior method, in some contexts, to police the quality of representation afforded by class counsel—for instance, by enabling rival firms within the plaintiffs' bar to compete for the allegiance of particular subgroups within the class who might regard themselves as likely to be shortchanged by a proposed class settlement.[35] The relative merits of judicial review and inter-firm competition to guard against misallocations in class settlements nonetheless center on informational questions—whether the reviewing court or the would-be rivals of class counsel stand to have, or to obtain, superior information about the relative value of claims.

VI. CONCLUSION

In this article, we have sought to reframe the debate over the allocation problem in multiple-claimant representations. The problem is not that contingent percentage fees are inherently incapable of providing lawyers with incentives both to maximize aggregate recoveries and to allocate them according to relative claim value. To the contrary, as we have shown, it is possible to design a two-part contingent fee arrangement to address both the maximization and the allocation problem.

The illuminating question is why the market for multiple-claimant representations does not employ a fee arrangement along the lines we have described but, instead, uses disclosure requirements, client control rights, third-party review, or some combination of such methods to address the allocation problem. The answer, we cautiously infer, is that these non-fee methods offer solutions more efficient for lawyers

[35] See, e.g., John C. Coffee, Jr., *Class Action Accountability: Reconciling Exit, Voice, and Loyalty in Representative Litigation*, 100 Colum L Rev 370, 422-28 (2000); Richard A. Nagareda, *The Preexistence Principle and the Structure of the Class Action*, 103 Colum L Rev 149, 168-74 (2003).

and claimants than the process of bargaining that would be needed to pursue a two-part contingent fee. The central point remains: The allocation problem is properly framed as a debate over relative efficiency in the overcoming of informational barriers, not as a debate necessitated by an inherent limitation of fee design.

Appendix

In this appendix we will give the general solution to the allocation problem for an arbitrary number of clients. We will assume that the clients are numbered $\{1,2, \ldots ,n\}$ and that client i is deserving of the percentage r_i of the settlement, for each i, where r_i is a number between 0 and 1 and the sum of all of the r_i's is 1. In addition assume that the attorney deserves a target percentage t of the settlement as a fee.

Let $F(P_1, \ldots ,P_n)$ be the function defined by

$$F(P_1, \ldots , P_n) = \frac{t}{\prod_{i=1}^{n} r_i^{r_i}} \prod_{i=1}^{n} P_i^{r_i}.$$

Lemma The function $F(P_1, \ldots ,P_n)$ achieves its maximum under the condition that $\Sigma_{i=1}^{n} P_i = S$ when $P_i = r_i S$ for each i. For those values of P_i the value of F is tS.

Proof: We apply the theory of Lagrange multipliers to this optimization problem. Consider the function $G(P_1, \ldots ,P_n,\lambda)$ defined by

$$G(P_1, \ldots , P_n, \lambda) = F(P_1, \ldots , P_n) - \lambda \left(\sum_{i=1}^{n} P_i - S \right).$$

The maximum of F given that $\Sigma_{i=1}^{n} P_i = S$ can be found by computing the partial derivatives of G, setting them equal to 0, and then solving for the values of P_i and λ. It is easy to check that for each value of i we have that

$$\frac{\partial G}{\partial P_i} = \frac{r_i}{P_i} F - \lambda$$

and

$$\frac{\partial G}{\partial \lambda} = \sum_{i=1}^{n} P_i - S$$

Setting the first set of equations to 0 reveals that

$$\frac{r_i}{P_i} = \frac{r_j}{P_j}$$

for all values of i and j. Fix j and then we see that $P_i = (r_i/r_j)P_j$ for all i. Setting the second equation above to 0 and plugging in for P_i results in

$$\sum_{i=1}^{n} \frac{r_i}{r_j} P_j = \frac{P_j}{r_j} \sum_{i=1}^{n} r_i = \frac{P_j}{r_j} = S$$

and so at the maximum we have that $P_i = r_i S$. Plugging these values in for F we see that

$$F(r_1 S, \ldots, r_n S) = \frac{t}{\prod_{i=1}^{n} r_i^{r_i}} \prod_{i=1}^{n} (r_i S)^{r_i} = \frac{t}{\prod_{i=1}^{n} r_i^{r_i}} \prod_{i=1}^{n} r_i^{r_i} \prod_{i=1}^{n} S^{r_i} = \frac{t}{\prod_{i=1}^{n} r_i^{r_i}} \prod_{i=1}^{n} r_i^{r_i} S = tS$$

which is what we needed to show.