Influencing rent-seeking contests

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Abstract This paper shows that a policy that uniformly increases contestants' effort costs can lead to an *increase* in total effort. In asymmetric settings, this "levels the playing field" and therefore encourages weaker players (who otherwise would have stayed out) to enter. Paradoxically, a contest designer whose *only* objective is to maximize total effort may thus wish to make rent-seeking "more difficult." These results suggest that the often-lamented bureaucratic red tape might in fact be a rational response to the problem of attracting lobbyists to participate in a contest.

Keywords Asymmetric contests · Contest design · Effort costs · Entry decisions · Red tape

JEL Classification C72 · D72 · D73

1 Introduction

Following seminal contributions by Tullock (1967, 1980), Krueger (1974) and Posner (1975), the literature on rent-seeking analyzes contests in which a number of players expend resources (money and effort) to win a "prize" such as a government contract, monopoly license or regulatory decision.[1] Much recent work has focused on aspects of contest design, including variations in discriminatory power (Dasgupta and Nti 1998), simultaneous versus sequential (multi-stage) contests (Gradstein and Konrad 1999) and the number of prizes (Moldovanu and Sela 2001).

   One important result in the standard Tullock model of rent-seeking is that an effort-maximizing contest designer never wishes to implement a policy that uniformly increases

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[1]Contests have been applied to many other settings, such as political competition, military conflict and the internal organization of firms. Baye and Hoppe (2003) show that rent-seeking, patent race and innovation games are strategically equivalent. See also the excellent survey by Nitzan (1994) for further discussion and examples.

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the effort costs of all contestants. This points to an appealing intuition that a contest designer will generally try to make rent-seeking "as easy as possible" for contestants.

In reality, however, it seems hard to believe that effort costs really are kept to their minimum. Indeed, the lobbying process in practice is hardly frictionless. For example, Lockard (2003) observes that "rent-seeking expenditures may need to be accomplished through inefficient means. Payments may need to be structured and directed through costly channels to conform to campaign finance laws." In a similar vein, Wilson (1989: 121) notes that "all these complexities of doing business in or with the government are well known to citizens and firms. These complexities in hiring, purchasing, contracting, and budgeting often are said to be the result of the bureaucracy's love of red tape."

Moreover, a contest designer may have substantial discretion to influence contestants' effort costs. For instance, higher-ranking officials can restrict access by pretending to be "hard to get".[2] There could also be scope to influence the kind of lobbying technique employed, such as wining-and-dining, large-scale publicity campaigns or a simple favour.[3]

All of these "policies" can make exerting a given amount of effort in the rent-seeking process more time-consuming, and hence costly for all (potential) contestants. Similarly, with several firms vying for a monopoly license, bidding costs may remain above their minimum level if the contest designer withholds favourable financing conditions, or puts in place (excessively) complicated rules and procedures.

The apparent existence of such cost-raising policies is difficult to reconcile with the results and intuition obtained from the standard Tullock model. In contrast, the results in this paper suggest that making rent seeking "more difficult" might in fact be a rational response of an effort-maximizing bureaucrat to the problem of attracting lobbyists to *participate* in her contest.

We consider an otherwise standard contest where players have to incur an entry cost (such as upfront preparation costs or a registration fee) before competing for the prize. When players are symmetric, the standard intuition that increasing the costs of rent seeking must decrease players' effort is correct. However, in asymmetric settings, such a policy "levels the playing field" so weaker players (who otherwise would have stayed out) may now enter the contest—which can lead to an *increase* in total effort. The analysis thereby highlights that even small entry costs can have a significant impact on contest outcomes.

The present paper is related to several strands of the extant literature on rent-seeking, in addition to the one on contest design. In particular, some recent papers examine rent-seeking contests with asymmetric players and costly entry (but not contest design).[4] Gradstein (1995) notes that entry costs help explain why so many real-world contests have only a relatively small number of participants. He shows, inter alia, that entry costs reduce both the equilibrium number of contestants and the degree of rent dissipation. Anderson and Stafford (2003) present evidence from experiments that supports these predictions.

Finally, Runkel (2006) also addresses the prevalence of cost-raising policies (in a two-player setting without entry considerations) by suggesting that "closeness of competition"

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[2]According to Nownes (2006: 68–69), "no matter where a lobbyist lobbies, it is quite a coup to have direct contact with the chief executive [e.g., of an executive agency]. Chief executives are not easily accessible to lobbyists, but most of them have staff people who are slightly more so."

[3]See, e.g., Nownes (2006) on the wide variety of techniques employed in practice by public policy, land use and procurement lobbyists.

[4]Earlier papers that feature entry costs (with symmetric players) include Higgins et al. (1985) and Appelbaum and Katz (1986).

may be part of a contest designer's objective function. Then, if the designer cares sufficiently strongly about closeness relative to total effort, a policy that uniformly increases effort costs becomes optimal. In contrast, the present paper does not rely on the assumption that closeness is part of the objective function. Here, closeness is a means to an end (namely, increasing total effort by encouraging entry), rather than an end in itself.

2 Model

2.1 Contest success function

We consider a standard contest in which N risk-neutral players simultaneously exert effort to win a prize that has a value of $V > 0$ to all. Player i's probability of winning the prize is given by[5]

$$\rho_i\left(e_i, \sum_{j \neq i} e_j\right) = \frac{e_i}{e_i + \sum_{j \neq i} e_j}. \tag{1}$$

We assume that the cost of effort, $C_i(e_i)$, is linear. Each player has a "baseline" marginal cost of effort of c_i and the contestants are asymmetric in the sense that $0 < c_1 \leq c_2 \leq \cdots \leq c_N$. Player 1 is the most efficient rent-seeker as he has the lowest cost per unit of effort exerted, while player N is the least efficient.

Accordingly, player i's expected profits are[6]

$$\Pi_i = V\rho_i\left(e_i, \sum_{j \neq i} e_j\right) - C_i(e_i). \tag{2}$$

There is a fixed cost of entering the contest of $K > 0$ that is identical for all players. This entry cost represents things such as upfront preparation costs or a registration fee that players have to incur before competing for the prize. Player i will choose to enter the contest only when $\Pi_i \geq K$, and will stay out otherwise. (It is assumed throughout that an indifferent player enters.)

2.2 Contest designer

The setup of the model so far is equivalent to that of Gradstein (1995). We enrich the analysis by considering a contest designer who cares about the total effort exerted by the N potential rent-seekers, namely $\sum_{i=1}^{N} e_i$.[7]

The designer can influence contestants' effort costs by, say, cultivating administrative unresponsiveness or putting in place (excessively) complicated rules and procedures. Such cost-raising policies are captured in the model as follows.

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[5]Other contest success functions are known to be rather intractable in all but two-player contests. The present analysis of contest design with entry costs only becomes interesting when there are at least three asymmetric players. We therefore restrict attention to the proportional specification (see Stein 2002 for a general treatment of this case). Ryvkin (2007) analyzes a limiting version of a more flexible contest success function when players are "weakly heterogeneous" (that is, almost symmetric).

[6]It is well known that affine transformations of expected profits may allow for other interpretations of the asymmetries between players (for example, differences in talent or ability).

[7]This objective function is widely employed in the literature on contest design, see e.g., Gradstein and Konrad (1999) and Moldovanu and Sela (2001).

Assumption 1 The cost-raising policy influences player i's effort costs according to $C_i(e_i) = (c_i + \theta)e_i$, where $\theta \geq 0$.

One can perhaps best think of the no-policy scenario with $\theta = 0$ as being the one where marginal effort costs (that is, $C_1', C_2', \ldots, C_N'$) are at their minimum level and there is no influence by the designer at all. A policy of the kind described in Assumption 1 then is non-discriminatory (or "fair") because it increases each contestant's marginal cost of effort by the same amount.[8]

The particular question of interest is whether, and under which conditions, this can actually lead to an *increase* in equilibrium total effort.

2.3 Contest equilibrium

The first-order condition for player i is

$$\frac{\partial \Pi_i}{\partial e_i} = \frac{V \sum_{j \neq i} e_j}{(e_i + \sum_{j \neq i} e_j)^2} - C_i' = 0, \tag{3}$$

which defines implicitly his best response to the aggregate effort of the other players, $\sum_{j \neq i} e_j$. The second-order condition $\partial^2 \Pi_i / \partial e_i^2 < 0$ is satisfied whenever player i and at least one other player enters the contest. If only player i enters, then he can win the prize by exerting an arbitrarily small amount of effort.

The following lemma characterizes the contest equilibrium.[9]

Lemma 1 *Suppose that $M \leq N$ players enter the contest and player i's cost of effort, $C_i(e_i)$, is linear.*

(a) *Player i's equilibrium expected profits are*

$$\Pi_i^* = V(\rho_i^*)^2, \tag{4}$$

where the probability of winning is

$$\rho_i^*\left(C_i', \sum_{j \neq i} C_j'\right) = 1 - \frac{(M-1)C_i'}{C_i' + \sum_{j \neq i} C_j'}. \tag{5}$$

(b) *Equilibrium total effort is*

$$\sum_{i=1}^{M} e_i^* = \frac{V(M-1)}{\sum_{i=1}^{M} C_i'}. \tag{6}$$

Proof Follows from straightforward manipulation of the M first-order conditions from (3), recalling that $C_i'(e_i)e_i = C_i(e_i)$ with linear effort costs. $\qquad \square$

An individual player's equilibrium effort level can easily be found since $e_i^* = \rho_i^* \sum_{i=1}^{M} e_i^*$. A more efficient player exerts more effort and thus has a higher probability of winning in equilibrium than a less efficient one. The $N-M$ players who stay out do not exert any effort and have a zero probability of winning.

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[8]This is termed "uniform cost regulation" by Runkel (2006).

[9]Uniqueness of equilibrium in asymmetric contests is established by Matros (2006).

3 Results

A first insight to emerge from Lemma 1 is that even small entry costs can have a significant impact on the contest outcome.

Recall that a player i will choose to enter the contest if his expected profits exceed the entry cost, that is when $\Pi_i^* \geq K$. Using Lemma 1(a), this participation constraint is equivalent to

$$\rho_i^* \geq \left(\frac{K}{V}\right)^{\frac{1}{2}} \equiv \rho_{\min}, \tag{7}$$

which defines $\rho_{\min} > 0$ as the minimum probability of winning that makes entry viable.

If K is a small fraction of V, say of order (proportional to) $\varepsilon > 0$, then $\rho_{\min}$ is of order $\sqrt{\varepsilon}$. For example, if $K/V = 0.01$, then $\rho_{\min} = 10\%$. In other words, even small entry costs lead to quite large values for $\rho_{\min}$.[10] This may prevent relatively inefficient players from entering the contest, which, other things equal, reduces equilibrium total effort.[11]

We make the following assumption concerning the size of entry costs.

Assumption 2 Entry costs satisfy $(K/V)^{1/2} \leq \frac{1}{N}$ such that the *average* player enters the contest.

The assumption can be restated as $\rho_{\min} \leq 1/N$. Evidently, this is a necessary condition for any entry to occur in symmetric equilibrium (where all N players are average).

The following lemma is key to understanding how entry decisions and total effort are influenced by the policy.

Lemma 2 *Suppose that all N players enter. The cost-raising policy increases (decreases) expected profits for all players who are below- (above-) average, that is $d\Pi_i^*/d\theta \gtreqless 0$ if and only if $\rho_i^* \lesseqgtr \frac{1}{N}$.*

Proof Recall that player i has effort costs of $C_i(e_i) = (c_i + \theta)e_i$ when the policy is implemented. Inspection of Lemma 1(a) reveals that $d\Pi_i^*/d\theta$ has the same sign as $d\rho_i^*/d\theta$. Hence differentiating the expression for ρ_i^* (when $M = N$ players enter) shows that $d\rho_i^*/d\theta \geq 0$ (and so $d\Pi_i^*/d\theta \geq 0$) whenever $C_i' \geq \frac{1}{N}\sum_{i=1}^{N} C_i'$. But Lemma 1(a) implies that this is equivalent to $\rho_i^* \leq 1/N$. (A player with above-average costs has below-average probability of winning.) The lemma follows immediately by reversing the previous inequalities. $\square$

The interpretation of Lemma 2 is that the cost-raising policy *levels the playing field* when players are asymmetric. In particular, it benefits players with below-average probabilities

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[10]The result that even small entry costs matter does not depend crucially on the assumptions that the entry cost and prize value are the same for all players. If the value of the prize to player i is V_i, then it is easy to check that his expected profits can be written as $\tilde{\Pi}_i^* = V_i(\tilde{\rho}_i^*)^2$ (analogously to Lemma 1(a)). His probability of winning $\tilde{\rho}_i^*$ now in general depends on all valuations, that is $V_1, V_2, \ldots, V_M$. If his entry cost is $K_i > 0$, he will enter if $\tilde{\Pi}_i^* \geq K_i$, or equivalently, $\tilde{\rho}_i^* \geq (K_i/V_i)^{1/2}$. This makes clear that the basic argument from the main text still goes through.

[11]Note that a player could be "inactive" even in a contest with $K = 0$ if his probability of winning (and hence expected profit) is negative. See also Hillman and Riley (1989), Stein (2002) and Matros (2006) on active and inactive players in contests without entry costs.

of winning and hurts those who have above-average prospects. Our further results follow naturally from this insight.

Suppose that, when no policy is implemented, $M < N$ players choose to enter the contest, while $N-M$ stay out because entry costs are too high. Recalling Assumption 2, it follows that those who initially stay out must have below-average prospects.

By Lemma 1(b), the policy decreases the effort exerted by the M players who would have entered the contest anyway. But now, from Lemma 2, it is clear that expected profits increase for all players who initially stayed out. This relaxes their participation constraints. Accordingly, a marginal player who was initially just out, may be just in when the policy is implemented. This argument extends beyond marginal players insofar as θ is not too small. Other things equal, entry increases total effort.

With asymmetric players, therefore, there may exist a basic trade-off that is absent from the symmetric case. Implementing a policy that makes rent-seeking "more difficult" decreases the effort exerted by "incumbent" players, but this must be set against potential increases in effort due to entry. The net effect of these two forces depends on the underlying parameters of the model.[12]

Clearly, it is necessary for at least one player to change his mind about entry (with the policy in place) for the trade-off to have any bite.[13] For simplicity, we focus in what follows on the case where exactly one player stays out initially, so $M = N - 1 \geq 2$.

Given that expected profits vary inversely with the marginal cost of effort, it is the least efficient player (with baseline marginal cost c_N) who initially chooses to stay out. Therefore, $\rho_N^*(c_N, \sum_{j \neq N} c_j) < \rho_{\min}$ in the no-policy scenario, implying zero effort in equilibrium, $e_N^* = 0$.

Denote player N's probability of winning when the policy is implemented as $\rho_N^{**}(c_N + \theta, \sum_{j \neq N}(c_j + \theta))$. If he now wishes to enter, then $\rho_N^{**} \geq \rho_{\min}$, or, equivalently using Lemma 1(a)

$$1 - \frac{(N-1)(c_N + \theta)}{\sum_{i=1}^{N}(c_i + \theta)} \geq \rho_{\min}. \tag{8}$$

It is helpful at this stage to denote the *average* baseline marginal cost of *all* N players as $\bar{c} \equiv \frac{1}{N} \sum_{i=1}^{N} c_i$. Now, rearranging the last condition and using $\rho_N^* = 1 - (N-1)c_N/N\bar{c}$ (again, from Lemma 1(a)) yields

$$\theta \geq \frac{\bar{c}(\rho_{\min} - \rho_N^*)}{1/N - \rho_{\min}} \equiv \theta_N, \tag{9}$$

where θ_N is the cutoff value for the policy that just induces player N to enter. Recalling that $\rho_N^* < \rho_{\min} \equiv (K/V)^{1/2} < 1/N$ (Assumption 2), it follows that $\theta \geq \theta_N > 0$ is required for player N to change his mind. This is not surprising given Lemma 2: The policy will induce entry only when it levels the playing field (by a sufficient amount).

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[12]With symmetric players $\Pi_i^* = V/N^2$ for all i (see Lemma 1(a)), so entry decisions turn out to be *independent* of the policy (and all players enter by Assumption 2). This is because the elasticity of any player's equilibrium effort with respect to his marginal effort cost then is exactly -1. In line with standard intuition, total effort always decreases (see Lemma 1(b)).

[13]There is also the perhaps obvious case when only one player enters initially and wins for a token amount of effort. Here entry increases the incumbent player's effort as well, so there is no trade-off, strictly speaking.

The key question now is whether the additional effort now exerted by player N outweighs the decrease in effort by incumbent players. This will be the case if

$$\sum_{i=1}^{N} e_i^{**} \geq \sum_{i=1}^{N-1} e_i^*, \tag{10}$$

where the left-hand side is the equilibrium total effort by all N players when the policy is implemented, while the right-hand side is total effort by the $N-1$ rent-seekers who enter when it is not. Using Lemma 1(b) and some rearranging along previous lines shows that the last condition is equivalent to

$$\theta \leq \frac{\bar{c}\rho_N^*}{(N-2)} \equiv \bar{\theta}, \tag{11}$$

where $\bar{\theta}$ is the upper bound on the policy. Notice that both θ_N and $\bar{\theta}$ are proportional to the average baseline marginal cost $\bar{c}$.

For both conditions (9) and (11) to be met, there must exist a policy $\theta > 0$ such that $\bar{\theta} \geq \theta \geq \theta_N$. Clearly, it is necessary that $\bar{\theta} > 0$, so $\rho_N^* > 0$. This means that although player N initially did not enter, he must have had a positive probability of winning (been "potentially active") for total effort to increase.[14]

Using the two conditions and rearranging, the requirement $\bar{\theta} \geq \theta_N$ can also be written as $\rho_{\min} \leq [1 + N(N-2)]/[N + N(N-2)/\rho_N^*]$, so that entry costs must be sufficiently small. Note that this is stronger than Assumption 2, namely $\rho_{\min} \equiv (K/V)^{1/2} < \frac{1}{N}$.

The following proposition summarizes.

Proposition 3 *Suppose that players have asymmetric costs and that $N-1$ players enter before the policy is implemented while player N stays out. With a cost-raising policy $\theta \in [\theta_N, \bar{\theta}]$, player N now enters and total effort is higher than for $\theta = 0$, where $\theta_N > 0$ and $\bar{\theta}$ are defined in (9) and (11).*

Proof Follows from above discussion.   □

Proposition 3 shows that in principle total effort can *increase* with the implementation of a policy that uniformly increases effort costs. Standard intuition may thus be quite unreliable in asymmetric settings when players' entry decisions matter. To *maximize* total effort, the designer simply chooses the policy that just induces entry, namely θ_N.[15]

Paradoxically, making rent-seeking more difficult can be a good idea for a contest designer. This result does not rely on closeness of competition being part of the contest designer's objective function. Here, closeness is a means to an end (namely, increasing total effort by encouraging entry), rather than an end in itself.

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[14]The condition $\rho_N^* > 0$ can be expressed in terms of the baseline effort costs as $(N-2)c_N < \sum_{i=1}^{N-1} c_i$. (See again Lemma 1(a).) Note that the policy could also induce a previously "inactive" player (with a negative probability of winning) to become "active" and enter. (This statement also applies for a contest with zero entry costs.) However, the analysis of (11) shows that the addition of such a player would not raise total effort. I am grateful to an anonymous referee for suggesting the clarification of this issue.

[15]For example, let $V = 100$ and $K = 2\frac{1}{4}$, so $\rho_{\min} = 15\%$. Suppose that $N = 3$, with $c_1 = c_2 = 1$ and $c_3 = 3/2$ (thus $\bar{c} = 7/6$). When $\theta = 0$, $\rho_3^* = 1/7 < \rho_{\min}$, so player 3 stays out and total effort $e_1^* + e_2^* = 50$. With a policy $\theta_N = 1/22$, all three players enter and total effort $e_1^{**} + e_2^{**} + e_3^{**} = 55$. (Note also that $\bar{\theta} = 1/6$ here.)

It is also worth noting that the most efficient player may actually *increase* his effort in response to the policy. To understand this, consider decomposing the impact of the policy on a (non-entrant) player i's effort into two effects. The first is the adjustment to the increase in marginal cost due to the policy itself ("before" entry occurs). Given this, the second is the adjustment to the entry of player N per se.

The first effect is always negative as a higher marginal cost causes best responses to shift inwards and reduces player i's effort. However, the second effect can be positive if player i has an upward-sloping best response curve. Since this is the case whenever $\rho_i^* > 1/2$, it follows that the second effect can be positive only for player 1.[16] Thus it is entirely possible that $e_1^{**} > e_1^*$ in addition to the increase in effort by the entrant, $e_N^{**} > e_N^* = 0$.[17,18] The policy's impact may therefore be non-monotonic in that it induces higher effort both at the "top" and the "bottom."

Finally, one might also ask how the policy affects the degree of rent dissipation. Note that total resource outlays in a contest where M players enter are $\sum_{i=1}^{M} C_i(e_i^*) = V[1 - \sum_{i=1}^{M}(\rho_i^*)^2]$, using the first-order conditions from (3). Therefore rent dissipation is higher with the policy than without[19] whenever

$$\sum_{i=1}^{N}(\rho_i^{**})^2 \leq \sum_{i=1}^{N-1}(\rho_i^*)^2. \tag{12}$$

For simplicity, consider the case with $N-1$ symmetric incumbents and the effort-maximizing policy $\theta = \theta_N$. Then $\sum_{i=1}^{N-1}(\rho_i^*)^2 = 1/(N-1)$ by symmetry and $\sum_{i=1}^{N}(\rho_i^{**})^2 = (1 - \rho_{\min})^2/(N-1) + (\rho_{\min})^2$ since $\rho_N^{**} = \rho_{\min}$. It is now easily verified directly that the inequality from (12) holds. Insofar as these outlays are socially wasteful, the cost-raising policy may thus have an adverse impact on welfare.[20]

4 Conclusion

Policies designed to make rent-seeking more difficult can have unexpected consequences in asymmetric settings. In particular, uniformly increasing contestants' effort costs can lead to an *increase* in total effort, since this levels the competitive playing field and thus encourages entry of weaker players (who otherwise would have stayed out because of entry costs).

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[16]To see this, denote by $e_{-i} = \sum_{j \neq i} e_j$ the aggregate effort of all players except player i. Along player i's best response $[\partial^2 \Pi_i / \partial e_i^2] \, de_i + [\partial^2 \Pi_i / \partial e_i \partial e_{-i}] de_{-i} = 0$. Using the first- and second-order conditions one obtains that $de_i / de_{-i} = (e_i - e_{-i})/2e_{-i}$. Evidently, $de_i / de_{-i} > 0$ requires $e_i > e_{-i}$, that is, $\rho_i^* > 1/2$.

[17]Consider the previous example (see footnote 15), but now let $c_1 = 3/5$, $c_2 = 7/5$ and $c_3 = 3/2$ (so $\bar{c} = 7/6$ again). When $\theta = 0$, player 3 stays out, so $\rho_1^* = 7/10$ and thus $e_1^* = 35$. But with $\theta_N = 1/22$, $e_1^{**} = 35\frac{19}{48}$ is slightly higher than before (although $\rho_1^{**} < \rho_1^*$).

[18]The stability condition that the (absolute value of) the slope of best responses is less than unity, that is $|de_i/de_{-i}| < 1$ for all i, requires $\rho_i^* < (M+1)/2M \leq 3/4$, which puts an upper bound (only) on player 1's probability of winning. However, this does not rule out the possibility that $e_1^{**} > e_1^*$; see the example in footnote 17.

[19]Of course, there is also an additional entry cost incurred by player N when the policy is implemented.

[20]We conjecture that this result holds more generally when the incumbents are not symmetric.

Paradoxically, implementing a cost-raising policy may thus be a good idea for a contest designer whose *only* objective is to maximize effort.[21] These results suggest that the often-lamented bureaucratic red tape might in fact be a rational response to the problem of attracting lobbyists to participate in a contest.[22]

The central insight that running a (loosely speaking) "inefficient" contest may be in a designer's interest has a similar flavour to some other recent work in mechanism design. For example, Bulow and Klemperer (1996) show that a seller may, in effect, wish to forgo significant bargaining power vis-à-vis potential buyers if this attracts the entry of an additional "serious" bidder into the auction. Similarly, Che and Gale (1998) show that, perversely, imposing a (uniform) cap on individual lobbyists' expenditures may increase aggregate expenditure, since lobbyists with lower valuations for the prize then compete more aggressively.

The present analysis highlights that even small entry costs can have a significant impact on contest outcomes. While it is, of course, *not* argued that higher effort costs *generally* lead to an increase in total effort, the results do suggest that standard intuition needs to be applied with some care when players are asymmetric and entry is costly. This may also prove to be of relevance when the contest designer has other policy instruments at her disposal.

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[21]In many real-world contests, it seems plausible both that closeness per se (or a function thereof) is an objective of contest design (as in Runkel 2006) and that players' entry decisions matter. Moreover, these two explanations for the prevalence of cost-increasing policies do not rule out one another. Indeed, it is easy to see that they may be complementary in the sense that they sometimes can *only jointly* explain why such policies exist.

[22]The analysis may also suggest a mechanism by which inactive ("latent") special interest groups can be mobilized (say, by politicians), see especially Olson (1971). I thank William Shughart for this observation.

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