One Share One Vote?

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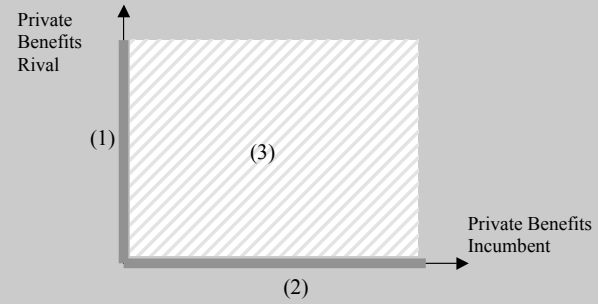
Introduction

Grossman and Hart (1988) and Harris and Raviv (1989) (GH-HR) study the optimality of 1S1V from the perspective of an entrepreneur writing a charter. Specifically, they figure out how a founder/entrepreneur, if perfectly informed about a bidder's characteristics, would allocate the firm's security benefits and voting rights to different classes of shares so as to maximize the firm's IPO value.

Their conclusion that 1S1V is optimal, by and large, is too sweeping, for two reasons. First, in reality there is no perfect foresight: at best, the founder knows, say, the mean and variance for a future bidder's characteristics rather the exact details. Second, only a restricted set of cases is really analyzed. In their model, the total value consists of security benefits that accrue to shareholders and private benefits appropriated by the controlling management; and GH-HR mostly consider cases where only one player has the potential to extract private benefits (situations 1 and 2 in Figure 1), mentioning area (3) merely as an uninteresting exception.

Accordingly, our own objectives are to study situations where any winning contender can reap private benefits from control (area (3)) and to add uncertainty about the bidder's characteristics. We also study the relation between private and social value. We find that GH-HR miss cases where dual-class charters outperform 1S1V even with perfect foresight about the bidder's characteristics, and therefore overstate the private optimality of 1S1V. Consistent with this, our imperfect-foresight analysis fails to produce even a single case where 1S1V does better than the two competing dual-class charters that enter the race. We nevertheless find that deviations between social and private values remain modest and that complicated charters may even be desirable.

Figure 1: GH(1988) and HR(1989) claim optimality of 1S1V by analyzing takeovers with player's characteristics on (1) and (2). We address the optimality issue in the larger area (3)

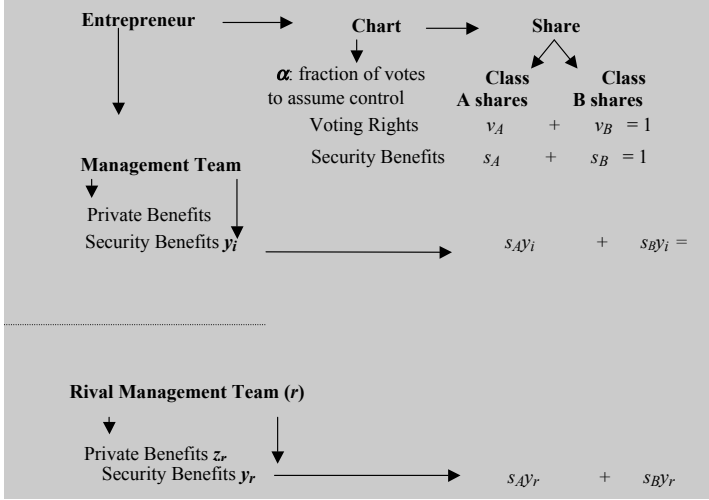


Model Set-up

As in GH (1988), an entrepreneur with no financial resources has started up a firm. Part of the cash flow is captured as private benefits by management, and the remainder are security benefits assigned to the shareholders. The entrepreneur appoints a management team i, the incumbent, under whose control the firm generates security cash flows y_i and private benefits z_i. The entrepreneur also issues class-A and -B shares with voting powers v_a and v_b=1-v_a, and cash-flow rights $s_a y$ and $s_b y$=(1-s_a)y, respectively. Without losing generality we assume $v_a \geq v_b$. The entrepreneur also sets a level for the proportion of votes needed to oust i. Lastly, he sells all claims to atomistic, risk-neutral investors. Neither the incumbent management nor any potential rival owns any of these securities.

A rival management team, r, then attempts to dismiss the incumbent managers and take control. If successful, the cash flow would change to levels y_r for the security holders and z_r for r. These numbers are known to all investors. This rival publicly announces her bid, taking into account that the incumbent may counterbid. We limit ourselves to bids that are conditional offers for all shares: take-over codes typically do prescribe that a change of control should lead to a bid for all outstanding shares. After r's final bid (and i's

Figure 2: The Model Set Up



final counterbid, if any), investors choose to tender shares or votes to either *i* or *r*. A change of control occurs when enough votes are in favor of the change.

The bidding war

The possible bidding games come in two kinds: in a double bid, *r* either needs the votes from both A and B shareholders to obtain enough votes, while in a single bid those from the A class suffice.

Single bidding

The maximum a player would rationally pay for the A shares (his reservation value) consists of the shares' security value under that player's rule, plus the player's private benefits. For *r* to win, the bid prices needs to be at least the larger of two numbers: (a) *i*'s reservation value—otherwise *i* will trump *r*'s offer; and (b) the post-bid security value—otherwise the atomistic shareholders will free-ride, preferring to keep the shares instead of tendering them. The rival will make such a bid only if its cost is below her own reservation value; if not, the value of the target company remains at y_i.

	Single bid	Double bid
No free riding (A)	$p_{a,r} \geq s_a y_r$	$p_{a,r} \geq s_a y_r$
No trumping by *i* (A)	$p_{a,r} \geq s_a y_i + z_i$	$p_{a,r} \geq s_a y_i + z_i$
Cost of cheapest bid (A)	$p_{a,r} = s_a y_i + \text{Max}(s_a (y_i - z_i) + z_i, 0)$	$p_{a,r} = s_a y_i + \text{Max}(s_a (y_i - z_i) + z_i, 0)$
No free riding (B)	—	$p_{b,r} \geq (1-s_a) y_r$
No trumping by *i* (B)	—	$P_{b,r} \geq (1-s_a) y_i + z_i$
Cost of cheapest bid (B)	—	$p_{b,r} = (1-s_a) y_i + \text{Max}((1-s_a)(y_i - z_i) + z_i, 0)$
Total cost	$p_{a,r} = s_a y_r + \text{Max}(s_a (y_i - y_r) + z_i, 0)$	$p_{a,r} + p_{b,r} = y_i + \text{Max}(s_a(y_i - z_i) + z_i, 0)$ $+ \text{Max}((1-s_a)(y_i - z_i) + z_i, 0)$
r's reservation value	$s_a y_r + z_r$ (for A)	$y_r + z_r$ (for A and B)

The double-bid game

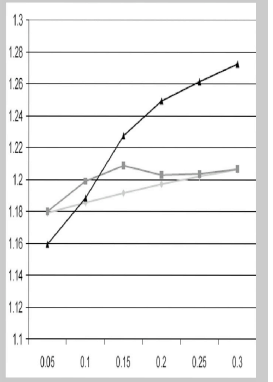
There is an interesting asymmetry in the double-bid situation. For *i* to win, it suffices to buy either the A or the B shares, while both are needed for *r* to win. Thus, *r* now needs to ensure that *i* cannot trump her bid on either class even when *i* would spend his entire private benefits on buying one type of shares. For these bids to be possible, *r*'s rationally spendable resources must exceed the sum of *i*'s alternative reservation prices. If the above condition is met, *r* takes over the shares at the lowest prices that meet the free-rider bounds and *i*'s reservation values. The security value of the firm as a whole then follows easily.

The above implies two advantages of the incumbent over *r*. First, while *r* needs the votes from both classes of shares to make a successful bid, *i* can block this bid by focusing on only one class. Second, *r* makes the first move, so *i* can afford to wait and decide on the target class for its counterbid after seeing *r*'s bid. Thus, *r*'s first move must block each of the two possible counterbids, meaning high bids for both classes. Compared to the single bid case, to *i* a dollar of private benefits now provides twice as much firepower as it does to *r*. Stated differently, with a double-bid charter *r* often has to pay more.

Privately optimal sharing & voting structure

In GH-HR style, we can assess what charter the founder would choose if the exact characteristics of the rival management team were fully known already. Although we relax this unrealistic situation in the next paragraph, it is useful to see under what conditions the formally dual structure optimally collapses into a virtual 1S1V. This GH-HR type analysis is quite negative about 1S1V, from the founder's perspective. A pseudo-1S1V arises when the optimal dual-class charter is of the single-bid type and all security benefits are optimally assigned to the A shares. But such a quasi-1S1V is never strictly optimal; only if security benefits are smaller under *r*'s rule there is one domain where quasi-1S1V matches a non-1S1V charter. A double-bid charter, lastly, is unambiguously optimal under certain circumstances; and this type can never collapse to a virtual 1S1V as the B shares always have vital votes.

Figure 3: IPO Value when the entrepreneur maximizes value. -◊- 1S1V, -_- optimal single bid, -_- optimal double bid. $y_i = E(y_r) = 1$, $z_i = 0.1$. z_r on x-axis.



The above assumes the founder is perfectly informed. This may be reasonable for the values of y_i and z_i: after all, the initial management is known to the entrepreneur. But the bidder's abilities are not really known at the time of writing the charter. So we now take y_r and z_r to be random variables at the time the charter is designed. Market values are then based on expectations. In a simulation setting, we let the entrepreneur maximize the proceeds from an IPO by having him choose the optimal s_a and v_a in a dual class structure. We then compare this to the 1S1V structure.

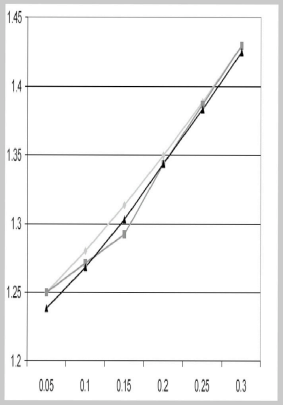
Values for y_r and z_r, are drawn from a wide range of normal distributions. For compactness we show just the results for cases where *r*'s expected security benefits equal *i*'s and only the private benefits are different. Security benefits y_i are normalized to unity for the incumbent management team and private benefits z_i are set to 0.1. The expected security benefits from *r* y_r also equal unity, and the expected z_r then varies along the x-axis from 0.05 to 0.25 covering five different simulation runs. The optimized IPO values of the firm are illustrated in Figure 3.

The figure shows that an entrepreneur strictly prefers a dual-class charter to a 1S1V structure. Generally, the double-bid dual-class charter seems to do especially better than the single-bid one when relatively more private benefits (on average) can be extracted by the rival management team. In simulations where *r* also offers a higher security value y_r (not shown here) these results are even stronger. When *i* is able to extract relatively more private benefits than its rival team, a single-bid charter seems to do better, but it still beats 1S1V.

Private v social optima

Arguably, society is primarily interested in total value maximization, which 1S1V achieves by definition. From the companion paper in this volume, a single-bid charter may be socially suboptimal because of leakages to or cross-subsidies from the B shares. In a double-bid charter, market failures may arise because *i*'s private benefits carry twice as much weight as *r*'s. With 1S1V never being optimal for the entrepreneur, the issue now is how significant the resulting conflict between private and social interests may be.

Figure 4: Social Value for different charters. -◊- 1S1V, -_- optimal single bid, -_- optimal double bid. $Y_i=E(y_r)=1$, $z_i=0.1$. z_r on x-axis.



In Figure 4 we plot the social values (*i.e.*, inclusive of private benefits) that correspond to each of the entrepreneur's possible charters. One comforting observation is that the differences in social values $y+z$ are nowhere as large as the differences in IPO security values (Figure 3). That is, the charter mainly affects how much private benefits can be extracted from the bidder, leaving the expected total size of the cake largely unaffected. We notably observe in Figure 4 that there seems to be no important link between the level of *r*'s z_r and the size of any social value lost by the entrepreneur's preferred charter; apparently, enough of *r*'s private value is creamed off during the take-over process. From further simulations we find that for *i* there is no such mechanism. For low values of z_i the impact of the founder's choice on social value similarly tends to be small or insignificant, irrespective of whether the z_r's and y_r's are large or not; but the potential amount of social value lost grows the larger z_i, and the effect strengthens for higher y_rs.

True, all these results depend on the parameters chosen for the simulation, and especially the *z* levels. While our numbers look reasonable to us for large listed companies in Western economies, there is no way to prove this. Subject to this caveat we conclude that for low z_i's, *ceteris paribus*, the social planner's optimal $y+z$ seems to be closely matched by any charter. Only for higher initial z_is does the charter's impact become noticeable from the social point of view. But, we repeat, the impact of the charter on social value is far smaller than the impact on post-bid security value or initial market value.

Conclusions

In a framework comprising control contests when both *r* and *i* potentially can enjoy private benefits or realize synergies from being in control of the target firm we find that 1S1V never comes out as the founder's first choice.

1S1V lacks two privately useful ingredients: the flexibility in sharing rules that sometimes leads to more complete rent extraction from the bidder, and the extra premia that sometimes have to be paid when *r* needs votes from two classes of shares while, to *i,* one class suffices for the *status quo*. This may explain why, in practice, deviations from 1S1V are not uncommon. We also address why governments rarely step in: as far as we can tell by our simulations, the social impact of the charter choice turns out to be far smaller than the private impact (on IPO value or post-take-over value). If private benefits are disapproved of, holding constant the cake's size, a double-bid charter may even be preferred as it is much better at channeling the rents the bidder would have extracted towards the founder.

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