# INFLUENCE OF THE OPTIMAL GROUP VOTING THRESHOLD ON SOCIAL WEALTH IN STOCHASTIC ENVIRONMENT

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The voting paradox when democratic decisions taken by the majority systematically reduce social wealth if offers are generated by the stochastic environment has been described in [1] (the "pit of losses" paradox) in Russian. The simplest approach to "neutralize" this paradox is increasing the majority threshold (the percentage of society that should support an offer to accept it). The paper deals with another approach. It is supposed that there is a "group" that can set the "group voting threshold" (the minimum profitability of the offer which would be supported by the group). What are the profitable / the optimal group voting threshold for the group members, the others, and the whole society? In this paper, we provide the answers to these and some other questions.

We use the ViSE (Voting in Stochastic Environment [2]) model. The society consists of $n$ participants, including $\ell$ egoists and $g = n - \ell$ group members. Egoists support the offers that increase their own capital. Group members vote for the offers profitable for this group, and against the other proposals. An offer is profitable for the group when the average capital increment of the group members exceeds the chosen group voting threshold $t$. This rule can be rewritten in terms of the deterministic version of the model used in [3]. The behavior of the voters corresponds to the Downsian concept [4].

We obtain the expressions for the expected value of egoists' and the group members' capital increments in such a kind of society. Moreover, we show that the group can set the threshold (it is natural to call it the optimal one) that maximizes the expected capital increment of the whole society. An expression for this threshold is provided; it is shown that a group of sufficient size could help to avoid the "pit of losses" paradox by choosing the optimal group voting threshold.

**References**

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