

# An extension of endogenous sharing-rule choice in Tullock group-contests

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January 30, 2026

## Abstract

This study characterizes the prize-sharing rules with a weighted mean of allocations based on each group member's effort-contribution share and equalized allocations among group members in Tullock group contests. The analysis expands the domain of the weight parameter and allows for more than two groups with asymmetric effort costs in a two-stage contest framework, where groups first choose sharing rules and then members choose effort levels. Using the share-function approach, the equilibrium sharing rules are derived. Three main results are obtained. First, the sharing rules in subgame-perfect equilibrium fall into two types: all active groups, and all groups except for the active group with the highest effort cost, adopt rules with strong incentivization that impose penalties on members exerting no effort. Second, the threshold conditions for the existence and non-existence of equilibrium are identified. Third, the nested share-function is shown to be applicable to group contest environments with multiple decision stages.

**Keywords:** Group contest; sharing rules; share-function approach.

**JEL Classification Numbers:** C72, D23, D74.

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