

Gilpatric, S. (2005). Tournaments, Risk-Taking, and the Role of Carrots and Sticks. Working paper.

Abstract

The choice of risk (or output variance) in tournaments has been studied from three perspectives. O’Keeffe, Viscusi and Zeckhauser (1984) explored a model in which the variance of players’ output was endogenously chosen by the tournament sponsor and interpreted as monitoring precision. Several papers have studied the risk-taking incentives of players in asymmetric tournaments when output variance is chosen by the player’s themselves (Bronars, 1987; Krakel and Sliwka, 2004). Finally, a recent paper by Hvide (2003) examined risk-taking by players in symmetric two-player tournaments where output variance can costlessly be altered by the players and is chosen simultaneously with work effort, and found that the ability to increase output variance can dull the incentive to exert work effort. In this paper we argue that perhaps the most important force driving risk-taking behavior by players has not yet been addressed: the incentive generated in *multiplayer* tournaments by asymmetric tournament prizes (i.e. the reward for finishing first not balanced by a corresponding penalty for finishing last). This is an issue of great empirical as well as theoretical relevance since many tournament settings, ranging from corporate promotion tournaments to competition among mutual fund managers, are likely to be characterized by competition among more than two players, and often the prize structure is inherently asymmetric (as when multiple workers compete for a single promotion opportunity).

We show that two-player tournaments are in fact a special case that generates quite different risk-taking incentives than for general n -player tournaments. In tournaments with more than two players a contestant’s increasing his output variance does increase the probability of his finishing both first and last when effort levels are symmetric in equilibrium. This generates an incentive to pursue risk (increase variance) when the tournament rewards the winner without punishing the loser, or to avoid risk (reduce variance) when the tournament penalizes the loser without a commensurate reward to the winner. Because in this case the choice of variance directly impacts the probability of winning (and losing) players will alter variance even when it is costly to do so unless the tournament payoffs balance the reward to the winner with a corresponding penalty to the loser.