Abstract

A gambler starts with a fortune $f < 1$ and plays in a Vardi casino with infinitely many tables indexed by their odds $r > 0$ in saddition, all tables return the same expected winnings $c < 0$ per dollar and an inflation factor is applied after each game. We determine the probability to reach fortune one, as well as an optimal strategy, different from bold play for fortunes larger than a critical value depending exclusively on $c$ and the inflation rate $a$. The general result is given in variational form, computed explicitly for some relevant special cases. The question whether bold play is an optimal strategy is discussed for various choices of the parameters.

This is a joint work with Ilie Grigorescu and Larry Shepp.