

## Herd Behavior Based On Market-Directed Resource Allocation Game

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The phenomenon of herding is very general in collective behavior of many species, including human beings. It pertains to human conduct during activities such as stock market, fashion world and even everyday decision making, judgment and opinion forming. In order to study the herd effect, we introduce a type of imitating agents in the Market-Directed Resource Allocation Game (MDRAG). Unlike the normal agents, the imitating agents do not occupy strategies, but just mimic others' behavior. Our results show that when the market environment is simple, the imitating herd will cause large fluctuations, which is related to "crowed effect". However, as the environmental complexity increases, the imitating agents will form a kind of adaptive herd, improving the efficiency and stability of market.