

## 基于有限知识和理性的双寡头战略定产纳什均衡问题研究

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## Study on the Nash Equilibrium of Duopoly Strategy Output-Making Based on Bounded Knowledge and Bounded Rationality

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摘要 经典古诺寡头模型以及目前相关的寡头定产竞争模型最致命的缺陷是对寡头博弈目标的假设、时序假设、有限理性与知识的假设与现实严重不符. 本文依据新的博弈条件假设, 构建了一种对现实决策情形具有较强的普适性的描述性博弈结构模型. 该模型能够对现实中的主导与从属型厂商之间、存在先知先觉博弈者的战略定产决策问题进行很好地描述, 且证明经典古诺博弈模型是该模型的一种特例. 在此基础上, 本文证明了: 一般情况下, 斗争策略是基于战略利益的双寡头定产竞争的纳什均衡策略, 并找到了双寡头战略调整的聚点均衡; 发现了: 存在战略扩展阻尼条件的先期决策寡头的阻尼纳什均衡, 并给出了该问题的构造性的证明和仿真算例.

关键词: 双寡头 有限理性 有限知识 战略定产 阻尼纳什均衡

Abstract: The most fatal flaw of the classic Cournot oligarch model and the related oligarch output-making competition model at present is that the assumption for the goal of oligarch, the assumption for time-order and the assumption for bounded rationality and bounded knowledge are all badly different from reality. In this paper, according to the new game condition assumption, a descriptive game structure model is constructed which has a stronger adjustability to practical decision-making conditions. This model can make a perfect description for the strategy output-making decision-making problem which has the first-knowing game player between the leading manufacturer and the subordinate manufacturer in reality. And it has been proved that the classic Cournot game model is a case of this model. On the basis of the above mentioned, in this paper it is proved that competition strategy is a kind of Nash equilibrium of duopoly output-making competition based on strategy benefit, and also the accumulation point equilibrium of duopoly strategy adjusting is found. Further more, the damping Nash equilibrium of the first decision-making oligarch which contains strategy expanded damping conditions is discovered, and the constructive demonstration and simulation example are also given in the paper.

收稿日期: 2006-04-30;

基金资助: 国家自然科学基金资助项目(70473037); 南京航空航天大学创新集体和科研创新基金项目(Y0488-091); 江苏省研究生创新计划项目; 国家教育部博士学科点科研基金项目(20020287001); 江苏省自然科学基金重点项目(BK2003211); 南京航空航天大学特聘教授科研创新基金资助项目(1009-260812)

引用本文:  
方志耕, 刘思峰, 李元年等. 基于有限知识和理性的双寡头战略定产纳什均衡问题研究[J] 中国管理科学, 2006,V(5): 114-120

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