Epistemology and Oligopoly Theory,

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Abstract
We examine the different levels of knowledge in models of
oligopolies and find that the presumed levels of knowledge in
standard models can lead to problematic equilibria. Closed-loop
equilibria and models with consistent conjectural variations are
particularly problematic in that they reduce or eliminate economic
rents while the players have more knowledge than under standard
Cournot assumptions. Furthermore, closed-loop games require amnesia
by the players: they know in the early stages how the other players
react in later stages and then suffer amnesia, presuming the other
players do not react when in subsequent stages. We show that when
players maximize profits knowing the effect of their optimization on
the ultimate equilibrium, players can achieve up to monopoly
profits. However, the equilibrium is dependent on the starting
point. Critical to modeling oligopolies is identifying the knowledge
levels and the decision spaces of the players. We illustrate this by
showing the consequences of including reactions and quantities as
choices in an optimization and the consequences of using the
tit-for-tat heuristic. Our conclusion is that oligopoly theory
should focus more on the effects of alternative descriptions of
player knowledge and the decision spaces rather than rely on a few
standard equilibria.