

Stable Coalition Structures of Patent Licensing Games*

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Abstract

We consider what coalition structures are stable in a Cournot oligopoly market with homogenous goods. Each firm's payoff is affected by a coalition to which it belongs as well as other firms' coalitions, so that we consider a coalition formation game with externality to deal with the problem. First, as a benchmark, we show that the pessimistic core is always non-empty, whereas the projective and optimistic core are always empty unless it is a duopoly market. Next, we consider an opportunity to make a contract with a patent holder of a new technology, which can be used to reduce each firm's production cost, and the effects on the stability of coalition structures. We show that, under certain conditions, the coalition structure where some firms contract with the patent holder to use the technology and other firms do not make any cooperation, which is a common assumption in the patent licensing games, can be a pessimistic core outcome. This result provides a theoretical foundation of the common assumption in the patent licensing games and clarifies when this assumption is plausible.

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