Review on master dissertation

"Dynamic Relational Contracts"
by Jiang Xin

In the presented research the different mathematical models of Rational Contracts are considered. One model deals with two person case, the other with more general n- person setting. In both cases the presented research deals with infinite stage game process. For the explanation of the basic results the introduction of main definitions from mathematical game theory was needed. This was done in section 2 of the dissertation.

It is necessary to mention that results concerning the two player case are not original, but are taken from known game theory literature.

The most interesting part of research is the n-person case. Here the first time in mathematical game theory literature the problem of the strategic support of cooperation in Relational Contracts is investigated on the bases of stage money transfers between the players.

It is proved that the transfers in the form of side payments in each stage game can lead to the construction of special type of Nash Equilibrium which supports the cooperation.

And what is more important is that this Nash equilibrium is a strong one, which means that it is stable against the deviations of coalitions of players.

The quality of dissertation can be considered as high, Jiang Xin shows sufficient level of understanding of game theoretical problems and what is more important that he gets new mathematical results concerning strong Nash Equilibrium as support of Relational Contracts in dynamic setting.

There are some suggestions which have to be made. In formula (2.7) the inequality must hold for all coalitions S, but this is not mentioned. On page 23 the figure 3.1 is not completely explained. In formula (4.12) it is to be mentioned that it is supposed that the maximal value of corresponding expression is really attained.

In spite of this remarks the reviewer is sure that the dissertation contains new results which can be published (after slight modification) and evaluates the dissertation as "excellent".

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