

Multilevel tax game

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The aim of this paper is to analyse the methodological contributions of distributed and self organised approach to the study of socio-economic inter- jurisdictional relationship. In the literature this sort of relationship is considered very important both for its effect on the flow of international funds and for the modification of internal welfare.

Using an example of inter-jurisdictional tax game, at vertical and horizontal level, we will show how this approach can improve the methods of modelling and the design socio-economic systems. In particular, we will see if the distributed approach, being interested in local interactions rather than structure and hierarchy, could be applied at the study of strategic tax behaviour of single autonomous jurisdictions (Kabur and Keen 1993; Mintz and Tulkens 1986; Kollintzas, et alt.. 2000) and could help to formalise these economics relationship. Our tax game will be characterised by: absence of central coordination, reorganisation and quite fast reaction to environment changes.

While some simulations about the effect of heterogeneous individual agents' interactions on welfare have been made the more important aspect of inter-jurisdictional heterogeneous relationship seems to be disregarded. This seems of paramount importance now that jurisdictions are loosing their sovereignty thanks to globalisation. In this way we intend to overcome the limit of the mathematical programming techniques for formalizing social science (Taber and Timpone 1996) and for dealing with heterogeneous agents, parallel processes and processes without a well-defined order of actions. Then, using a pure bottom up process by opposition to the classical analytic approach which make hypothesis about the global structure of the system we will implement a tax game simulation (Gilbert and Troitzsch, 2005) formalising the local interactions, using Netlogo and/or MIMOSE, for evaluating the implications of jurisdictional sovereignty loss linked to international openness and understanding if the model will generate emergent global behaviour.