Bankruptcy Games II

The constrained equal award rule for bankruptcy problems with a priori unions

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We consider bankruptcy problems where the creditors are grouped in a structure of a priori unions. Our main objective is to define a rule for dividing the available estate among all the creditors, which takes the structure of unions into account.

In a first step we introduce disjoint issue allocation situations. These are a special case of multi-issue allocation situations as introduced in Calleja, Borm and Hendrickx (2001); those in which every player is involved in exactly one issue. Every bankruptcy situation with a priori unions gives rise to a disjoint issue allocation situation, where the issues correspond to the unions. This allows us to define a class of cooperative games with transferable utility in order to analyse bankruptcy problems with a priori unions. These games turn out to be exact.

We provide different ways to extend a rule on the class of the standard bankruptcy problems to the class of bankruptcy problems with a priori unions. We concentrate in a rule that is an extension of the constrained equal award rule for standard bankruptcy problems. We study properties and provide two axiomatic characterizations of this rule. We also see that for a bankruptcy problem with a priori unions, this rule coincides with a certain cooperative solution concept for games corresponding to bankruptcy problems with unions. We also define consistency properties for this kind of problems, based on O’Neill (1982). Finally, we give some applications.