DESCRIPTION FOR THE GENERAL PUBLIC

The project concerns the theory of choice under risk, in particular the prospect theory of D. Kahneman and A. Tversky and aspects of its use in empirical economics studies. The applicability of the model depends on its algorithmization. The aim of the research project is to assess the adequacy of the CPT algorithm (cumulative prospect theory) for modeling the classical prospect theory. Part of the CPT algorithm concerning value function (valuation of monetary outcomes) is consistent with the classical prospect theory, therefore, the subject of research, is focused on the decision weighting procedure. In order to assess the correctness of decision weighting algorithm, two major research problems were formulated.

Problem 1. Investigating the impact of the applied decision weighing algorithm on the results of the model estimation for experimental data.

Problem 2. Examining the justification for the subjective valuation of the cumulative probabilities for profits and losses separately.

The research is based on the experimental method. Two experimental studies will be conducted, each involving students as research participants. The first experiment concerns the repeated binary choice under risk. The choice is over the pairs of the lotteries. The experimental results will be analyzed using econometric methods – random effects models for multiple binary response.

The second experiment will address the valuation of subjective probabilities, in particular in the context of losses and mixed lotteries. The experiment consists of two stages. The aim of the first stage is to assess the probability weighting function using the certainty equivalent method in both contexts: the positive and negative outcomes (gains and losses), and also for mixed lotteries. The second phase of the experiment will be based on a series of questions about the assessment of chances of different scenarios - referring to gains and losses. Respondents will be asked to make subjective probabilities assessments of events described by the scenes from different areas of life - finance, insurance, health, etc.

So far, the CPT algorithm has been the subject of numerous studies, but according to the authors' knowledge, the research problem was not formulated as in the Project. In previous studies, one can find the research concerning the relationship between the risk aversion in the value function and the optimism in the probability weighting function. Some claim that there is exchangeability between those two effects. However, no research was encountered on the mutual offsetting of the reflection effect in the value function and analogous effect in decision weighting algorithm.

In the case of a positive hypotheses verification, the results of the project may have an impact on the development of the choice theory under risk in the field of prospect theory modeling. The results would justify the claim for separating the classical prospect theory from the cumulative prospect theory and treating those two as different concepts. That would support the conclusion, that CPT is not just the algorithm for the prospect theory, and that one may use different, perhaps simpler, algorithm as adequately modeling prospect theory. Such simplification can help to facilitate and increase the use of modeling based on the prospect theory in the field economics studied (finance, insurance, etc.). It would also lead to the recommendation of reconsidering (or be careful with) the past results reporting the lack of reflection effect in the value function when the results were analyzed with CPT algorithm.