

## **Quantum Approach Explains the Need for Expert Knowledge: On the Example of Econometrics**

Songsak Sriboonchitta, Hung T. Nguyen, Olga Kosheleva, Vladik Kreinovich, Thach Ngoc Nguyen

**Abstract.** The main purposes of econometrics are: to describe economic phenomena, and to find out how to regulate these phenomena to get the best possible results. There have been many successes in both purposes. Companies and countries actively use econometric models in making economic decisions. However, in spite of all the successes of econometrics, most economically important decisions are not based only on the econometric models—they also take into account expert opinions, and it has been shown that these opinions often drastically improve the resulting decisions. Experts – and not econometricians – are still largely in charge of the world economics. Similarly, in many other areas of human activities, ranging from sports to city planning to teaching, in spite of all the successes of mathematical models, experts are still irreplaceable. But why? In this paper, we explain this phenomenon by taking into account that many complex systems are well described by quantum equations, and in quantum physics, the best computational results are obtained when we allow the system to make kind of imprecise queries – the types that experts ask.