Proposol for The Third Nordic Post-Keynesian Conference - Aalborg University, 22.-23. May, 2014

by Stefan Voss

Problems of Uncertainty

The theme of today's question is remarkable: "How to integrate 'Uncertainty' into macroeconomic analysis?" This sounds like we did not completely consider 'Uncertainty' in our models yet and we are now going to do that. We will just put it in like a new entity and then our new model will work sufficiently. Maybe like a mathematical variable or a statistical parameter which is similar to our economic world and then our new macroeconomic model will work much better. Unfortunately, the meaning of 'Uncertainty' is more difficult. The first problem starts with the question what the meaning of 'Uncertainty' really is, the second question is whether 'Uncertainty' plays a role in economics and if yes, how can 'Uncertainty' be transferred into an economic model.
In determinism there is a cause which leads to a specific result. On A follows B for what reason ever. In terms of 'Risk' on A *may* follow B. It also could be C,D,E or F. The result has a known probability, which means that the distribution of the probabilities is known. In this case 'Uncertainty' can be defined as a quantifiable risk. In other cases the distribution function is not known; the risk cannot be quantified. In this case, 'Uncertainty' is a non-quantifiable risk due to incomplete information. 'Uncertainty' also can be extended to the view that other events can happen which are not known ex-ante due to the fact that absolutely no information is available or simply not existing ('Fundamental Uncertainty'). The event can probably be something unexpected which no one is able to predict in anyway.
Last but not least we have to consider the relation between reason and effect. In one statistical model all past events have no influence on the probability of future events. The roulette game, playing dice or tossing a coin are such statistical models. All past events do not have any influence on future probabilities. Otherwise in non-linear dynamic processes past events have an impact on future outcomes. The distribution function is changing, depending on past events. In Chaos Theory there is a causal relation between reason and effect, but due to the high complexity of the system future events are not calculable and reasons can be very small; so marginal that they even cannot be detected (the flaps of a butterfly's wings, which causes a hurricane). There is also to distinguish between processes, which are reversible, irreversible or irrevocable. Additionally, in quantum mechanics there is no relation between cause and effect in the classical sense. The passive observer determines the results by the simple fact of *what he measures.* There is an unknown interaction between subject and object. There is *no dichotomy between subject and object* like in all other cases. This may not be a complete list of all kinds of 'Uncertainty' but it clearly shows how difficult it is to "integrate uncertainty into a macroeconomic analysis".
According to mainstream economics, uncertainty plays no role and also in the neoclassical synthesis of Keynes, uncertainty is simply eliminated. Only two minor schools, the Austrian School and the Post-Keynesian School have implemented 'Uncertainty' into their models. This paper will focus on the Post-Keynesian perspective. In the *Treatise on Probability* (1921) Keynes describes probability as *objective*. Later Ramsey and Finetti (*The Ramsey-De Finetti Theorem*) defined a *subjective* form of probability. Ramsey had a strong influence on Keynes with his criticism on Keynes's objective theory of probability and Keynes might have changed his view on probability later in *The General Theory* (GT). The Post-Keynesian School is still controversial about *what Keynes really meant about 'Uncertainty'* in the GT (*Continuity Hypothesis vs. Discontinuity Hypothesis*). Davidson added on the *ergodic axiom,* which in Davidson's view is an explanation for uncertainty in Keynes's sense.

The goal of this paper is to show the most important different views of uncertainty and to evaluate which kind of uncertainties could be most appropriate for a Post-Keynesian perspective. In times of an obviously increasing meaning of uncertainty in the real world of today this analysis is overdue.