Most standard macroeconomic models assume that all agents – households, firms, governments and central banks – have perfect information about the future. Sometimes we allow future to be uncertain, but every type of agents knows fairly well, what are the sources of uncertainty, what may happen to them and what are the odds of these events. This set of assumptions is taken not for convenience, but because it makes economic modelling tractable and thus permits an identification of effects of some policies on economic performance and well-being.

The global financial crisis along with the severe recession in the US and other countries demonstrated that models with such features as described above are not enough to explain the phenomena observed in the major economies. Moreover, strong interventions such as quantitative easing and forward guidance have delivered somewhat different outcomes than everybody expected.

Our objective in this paper is to provide an explanation of these puzzles by introducing *learning* of agents to economic models. We will permit the agents to learn about the state of the world and form expectations about it. We will also permit agents to learn and form expectations about monetary policy, which will affect their response to the actions of the central banks and thus economic effectiveness of the actions undertaken by central banks.

In principle, we assume that the previous models were wrong by not having the uncertainty about policy and learning. We also assume that models with such assumptions will explain better the events observed in the US economy (and, data permitting, also elsewhere). If we are right, the main outcome of this project will be better knowledge of the mechanisms underlying economic interactions, better informed central banks (and governments) and thus more effective economic policy. If we are wrong, we will know that uncertainty and learning cannot help in explaining the unexpected phenomena observed in the economies over nearly a decade and science has to seek further.