Abstract

We study the impact of diverse beliefs on conduct of monetary policy. Individual belief is modeled by a state variable that defines an individual's perceived laws of motion. We use a New Keynesian Model that is solved with a quadratic approximation hence individual decisions are quadratic functions. Aggregation renders the belief distribution an aggregate state variable. Although the model has standard technology and policy shocks, diverse expectations change materially standard results about a smooth trade-off between inflation volatility and output volatility. Our main results are summed up as follows:

(i) The policy space contains a curve of singularity which is a collection of policy parameters that divides the space into two sub-regions. Some trade-off between output and inflation volatilities exists within each region and some across regions. (ii) The singularity causes volatility of variables to be non monotone in policy parameters. Policymakers cannot assume a more aggressive policy will change outcomes in a predictable manner. (iii) When beliefs are diverse a central bank must also consider the volatility of individual consumption and the related volatility of financial markets. We show aggressive anti-inflation policy increases consumption volatility and aggressive output stabilization policy entails rising inflation volatility. Efficient central bank policy must therefore be moderate. (iv) High optimism about the future typically lowers aggregate output and increases inflation. This "stagflation" effect is stronger the stickier prices are. Policy response is muted since the effects of higher inflation and lower output on interest rates partially cancel each other. Effective policy requires targeting exuberance directly or its effects in asset markets. Central banks already do so with short term interventions. (v) The observed high serial correlation of 0.80 in policy shocks contributes greatly to market volatility and we show that a reduction in persistence of central bank's deviations from a fixed rule will contribute to stability. (vi) Belief dispersion is measured by cross sectional standard deviation of individual beliefs. An increased belief diversity is found to make policy coordination harder and results in lower aggregate output and lower rate of inflation. Bank policy can lower belief dispersion by being more transparent.