Abstract

In the present thesis, we are concerned with the modelling of macroeconomic uncertainty. First, we address the question of how to appropriately measure inflation uncertainty. At present, different ways of quantifying inflation uncertainty are employed in empirical studies. Thereby, one can differentiate two major approaches. Uncertainty measures either stem from a time series specification or are computed as a summary statistic based on inflation forecasts. In the first chapter, we provide a systematic evaluation of the competing approaches. By means of a forecasting contest, we show that the average across the uncertainty of different inflation forecasts provides the highest predictive content for realised inflation uncertainty.

In addition to the quantification of macroeconomic uncertainty, a deeper understanding of its origins is of importance for mitigating its adverse effects. In the first contribution of the second chapter, we start with an analysis on the interrelation between inflation uncertainty and the monetary policy framework in place. Over the last decades, monetary authorities in most economies have adopted inflation targeting to achieve low and stable inflation rates. Moreover, inflation targeting helps to stabilize inflation expectations and to reduce the uncertainty about future inflation rates. During the recent recession, inflation rates, however, have remained below the targeted level in many advanced economies. If inflation rates continuously deviate from the target, the stabilizing effect of inflation targeting on inflation uncertainty might be hampered. Therefore, we analyse the dependence of inflation uncertainty, inflation targeting and target deviations for a broad set of industrial and emerging market economies in a two-step procedure. Thereby, we account for the potential reverse causality by using an endogeneity robust identification method. Our results suggest that inflation uncertainty increases when inflation rates continuously miss the target. Furthermore, there is evidence for a reverse causality between unstable inflation expectations and deviations of inflation from the target.

In the second contribution, we investigate the link between interest rates and exchange rate volatility. The role of the financial channel for the determination of exchange rates has been increasingly highlighted. As a consequence of the failure of the uncovered interest rate parity, speculative investment strategies on the foreign exchange market have been profitable. Currency carry trading strategies exploit the failure of the parity to realize a profit from the interest rate differential by borrowing in the low interest rate currency and selling the high interest rate currency forward. We suggest an extended stochastic volatility model to model how changes in the interest rate differential between two economies impact on the exchange rate volatility of their currencies. We show that this effect depends on the sign of the differential. For monetary authorities in the low interest rate economy, the results imply that increases in the interest rate are associated with a rise in exchange rate volatility.