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Forecast evaluation of 1-step-ahead predictions using GARCH(1,1) on the Euro/US Dollar FX Spot Rate

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Abstract

Volatility, the degree of fluctuation of a price series, is a main concern within finance. Accurate measures and good predictions of volatility are crucial for implementations and evaluations. The EUR/USD currency pair is the most heavily traded exchange traded currency pair according to the Bank of International Settlements. In this thesis the GARCH(1,1) model with conditionally normal and t-distributed error terms will be used to make 1-step-ahead predictions of the Euro/US Dollar FX Spot Rate volatility. The forecasting evaluation is concerned with the fractions of violations of interval forecasts and the independence of these violations. Furthermore, by using the probability integral transform the entire density forecasts as well as the tails of the density forecasts will be evaluated. The results suggests that the GARCH(1,1) model assuming conditionally t-distributed error terms seems to be favourable for making volatility predictions.

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