The central banks' reaction functions are commonly estimated in the empirical literature, but the results vary even for the same central bank. Meta-analysis is a tool used to uncover publication bias and explain the heterogeneity in estimates. In this thesis I analyze 1128 estimates from 88 primary studies. I examine the estimates of the coefficients from Taylor rule specification with and without interest rate smoothing and find statistically significant evidence of publication bias in all estimates of Taylor rule coefficients. Furthermore, the estimation of the effects beyond publication bias yields much lower estimates than commonly thought. I also managed to explain some of the heterogeneity in the estimates by accounting for different data characteristics used in the primary studies. E.g. different measures of inflation and output gaps significantly influence the estimates of the Taylor rule coefficients.