# Analysis of factors influencing the size of the volatility risk premium of the EUR/USD exchange rate

**Milan Fičura**

**Abstract:** The work examines what prediction variables do influence the size of the volatility risk premium of EUR/USD exchange rate the most. The premium is defined as the difference between the option implied volatility (calculated as Model-Free volatility) and the subsequent realized volatility. From the results of the univariate and multivariate regression analysis it is clear that the most import prediction variable is the ex-ante estimate of the volatility risk premium constructed as the difference between Model-Free volatility (MFV) and the ARFIMA-RV forecast of realized volatility. In addition to that the size of the volatility risk premium positively depends on its past values during the last day, week and month, and it positively depends also on the current level of volatility, volatility of volatility as well as the past values of price jumps. The results of the multivariate regressions have shown that a model using all of the statistically significant variables on a 1% significance level clearly outperforms (out-of-sample) the univariate model using only the differences of MFV and ARFIMA-RV predictions as predicotrs. It has also been shown that the multivariate regression model of volatility risk premium can be used to adjust the MFV volatility forecasts in order to achieve better forecasting performance. The increase in performace is however not higher than in the case of a bivariate regression model of volatility using just MFV and ARFIMA-RV as predictors.

**Keywords:** Volatility risk premium, Volatility forecasting, Realized volatility, Implied volatility, Model-free volatility, Jump volatility

**JEL Classification:** C22, G10, G12, G13