

Equity Risk Premiums and Risk Free Rates in Modelling and Prediction of Financial Markets

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Abstract : This paper presents an adaptive framework for modelling financial markets using equity risk premiums, risk free rates and volatilities. The recorded economic factors are initially used to train four adaptive filters for a certain limited period of time in the past. Once the systems are trained, the adjusted coefficients are used for modelling and prediction of an important financial market index. Two different approaches based on least mean squares (LMS) and recursive least squares (RLS) algorithms are investigated. Performance analysis of each method in terms of the mean squared error (MSE) is presented and the results are discussed. Computer simulations carried out using recorded data show MSEs of 4% and 3.4% for the next month prediction using LMS and RLS adaptive algorithms, respectively. In terms of twelve months prediction, RLS method shows a better tendency estimation compared to the LMS algorithm.

Keywords : adaptive methods, LSE, MSE, prediction of financial Markets

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