

What Is a Right Metric to Measure Exchange Rate Forecasting Models' Accuracy?

Benjamin Zarate-Carbajal¹, Ángel Samaniego-Alcantar², José L. Chávez-Hurtado³

Instituto Tecnológico y de Estudios Superiores de Occidente (ITESO), Mexico

Abstract

The most common metric used to measure financial model errors is mean square error (MSE). This metric measures the distance between the actual closing price and the forecasted price at one point in time. However, during the day, actual prices are constantly fluctuating, therefore an additional metric is proposed: correct price percentage (CPP) metric, this last metric is used to measure the accuracy of the projected prices within a lower and upper limit within a period; as a result, as long as, the forecasted prices are within that range, the forecasted price will be correct. Our work compares those two metrics: mean square error and correct price percentage for different forecasting models created through an Artificial Neural Network (ANN), each model simulates an investment and calculate its geometric return. Findings demonstrate that CPP is a better metric to measure exchange forecast financial models' accuracy. CPP measures if the forecasted prices are within a target range, same as current prices in the market, where there are lower and higher prices during the forecasted period (bandwidth).

Keywords: Forecasting model metrics, mean square error, correct price percentage