

***Abstract: Foreign Exchange Rate Forecasting with a Virtual-expert
Partial-consensus Fuzzy-neural Approach for Semiconductor
Manufacturers in Taiwan***

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Abstract

Accurately forecasting the foreign exchange rate is critical to export-oriented enterprises like the semiconductor manufacturers in Taiwan. For this purpose, a virtual-expert partial-consensus fuzzy-neural approach is proposed in this study. In the proposed methodology, a committee of virtual experts is organized instead, and then they are asked to give opinions about the fuzzy forecasts. For each virtual expert, a corresponding fuzzy linear regression (FLR) equation is constructed to forecast the foreign exchange rate. Each FLR equation can be fitted by solving two nonlinear programming problems, based on the opinions of the virtual expert. To aggregate these fuzzy foreign exchange rate forecasts, a two-step aggregation mechanism is applied. To evaluate the effectiveness of the proposed methodology, the practical case of forecasting the foreign exchange rate of NTD for USD is used.

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