

## The application of neural networks and grey system theory in foreign exchange rates forecasting

Yu-Teng Chang

Chih-Yao Lo \*

Pin-Chang Chen

Yueh-Kuei Huang

*Department of Information Management*

*Yu-Da College of Business*

*No. 168, Hsueh-fu Rd., Tanwen Village*

*Chaochiao Township, Miaoli County*

*Taiwan 361*

*R.O.C.*

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### Abstract

This study develops an integrated forecasting model, which combines artificial neural network and grey system theory based on the combination of forecasts method. This integrated forecasting model is intended to take advantage of grey system theory by transforming the original disorderly raw data into a dimensionless series in order to obtain an appropriate fundamental for the accurate mathematical relations, along with the advantage of artificial neural networks to provide forecasting results by using its learning ability in nonlinear relationships inherent in the data. This study provides evidence on the effectiveness and efficiency of the integration of artificial neural network and grey system theory into a combined expertise construction. The results of this study show that the integrated forecasting model has outperformed the original artificial neural network forecasting model and obtained better forecasting performance in foreign exchange rates forecasting.

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*Keywords* : *Artificial neural network, grey systems theory, combination of forecasts, foreign exchange rates forecasting.*

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\*E-mail: jacklo@ydu.edu.tw

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*Journal of Information & Optimization Sciences*

Vol. 27 (2006), No. 3, pp. 615–628

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0252-2667/06 \$2.00 + 0.25