

汇率的非线性组合预测方法研究

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Research on Nonlinear Combining Exchange Rate Forecasts

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摘要 近年来的经济统计研究表明,组合预测比单项预测具有更高的预测精度,但线性组合预测方法在汇率的组合建模与预测方面存在着较大的局限性。本文提出了一种基于模糊神经网络的汇率非线性组合建模与预测新方法,并给出了相应的混合学习算法。对于英镑、法朗、瑞士法朗、日元对美元等汇率时间序列的组合建模与预测结果表明,该方法具有很强的学习与泛化能力,在处理外汇市场这种具有一定程度不确定性的非线性系统的组合建模与预测方面有很好的应用价值。

关键词: 汇率 组合预测 信息集 模糊神经网络

Abstract: It has been shown in recent economic and statistical studies that combining forecasts may produce more accurate forecasts than individual ones. However, the linear combination forecasting method is known to have the limitation for composite modeling and forecasting of foreign exchange rates. This paper presents a new nonlinear composite forecasting method for exchange rate modeling and forecasting based on fuzzy neural network. Furthermore, the corresponding composite learning algorithm including Kohonen self organizing future map, supervise competitive learning and back propagation are used to learn the connection weights of fuzzy neural network and partitions of fuzzy subsets. It has been shown by the composite modeling and forecasting results about the exchange rate time series of the British pound, the French franc, the Swiss franc and the Japanese yen against U.S. dollar that the method has reinforcement learning properties and mapping capabilities. With respect to composite modeling and forecasting of nonlinear system which has some uncertainties, the method is available.

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