

Detecting a Currency's Dominance using Multivariate Time Series Analysis

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ABSTRACT

A currency exchange rate is the price of one country's currency in terms of another country's currency. There are four different prices; opening, closing, highest, and lowest can be achieved from daily trading activities. In the past, a lot of studies have been carried out by using closing price only. However, those four prices are interrelated to each other. Thus, the multivariate time series can provide more information than univariate time series. Therefore, the enthusiasm of this paper is to compare the results of two different approaches which are mean vector and Escoufier's RV coefficient in constructing similarity matrices of 20 world currencies. Consequently, both matrices is used to substitute the correlation matrix required by network topology. With the help of degree centrality measure, we can detect the currency's dominance for both networks. The pros and cons for both approaches will be presented at the end of this paper.

Keywords: RV-coefficient, Mean vector, Network topology, Minimum spanning tree, Centrality measure