

Forecasting of Short-Run Exchange Rates: A Box-Jenkins Approach

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Abstract

Short-run forecasting of exchange rate has been a recent debate in economic theory. This paper tries to find out an extensive view whether the exchange rate can be treated as a model for short-run forecasting purpose. The study focuses on forecasting the daily exchange rate movements of Bangladesh for the period of January 1 to May 31, 2005 using the Box-Jenkins four steps approach. The results found that residuals from the OLS regression are white noise error term, which implies that this model is good for estimating the short-run exchange rate of Bangladesh. It points out that daily exchange rate fluctuations in Bangladesh during the forecasted period are almost 2.5 percent from the mean value. This has the implication that the fluctuations in exchange rate movements are not highly volatile. The model may be used as tool of forecasting the movements of exchange rate (Taka/\$US) in Bangladesh.

Key Words: Forecasting exchange rates, Stationarity, Autocorrelogram, ARIMA, Box-Jenkins etc.

1. Introduction

The concept of exchange rate has been a hotly debated issue and remains perhaps one of the most important questions in international finance. Since the international business environment is one in which there is no universal medium of exchange, exchange rates are a matter of necessity for interna-

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tional trade. As a result, when transactions are denominated in foreign currencies two basic needs arise. First, there is the need for translation. That is, the transaction which is stated in terms of a foreign currency must be re-expressed or restated in terms of the local currency before it can be recorded in the local accounting records. Second, settlement of the transaction requires conversion. This means that when payment is due, a sufficient amount of the local currency must be exchanged for the stated amount of foreign currency so that payment can be made. At present, both translation and conversion of foreign currency involve the use of exchange rates. Therefore, in order to gain a more thorough understanding of foreign currency translation, it is important to examine the nature of exchange rates. The question which is the concern issue for this study by knowing its above criteria is whether the exchange rate has the predictive influence in the short?

Therefore, exchange rate has become an instrumental tool in restoring the external balance of any country. The changes in exchange rate have significant impact on international trade. Bangladesh is a developing country having good trade relationship with many countries across the world. Among them USA is the major trading partner for Bangladesh. USA has become the major export market for Bangladeshi garments products. The US dollar is the dominance currency in the global market. In Bangladesh there is no exception to this. Most of the activities in foreign exchange market are accounted for in \$US, i.e., the majority of foreign transactions are taking place in \$US. The Bangladeshi taka always depreciates against the \$US dollar and this has a negative impact on the international trade. Import, export as well as different monetary issues are related to the exchange rate stability. Under this circumstance it would be very interesting to study in this paper to forecast the daily exchange rate of Bangladesh over a short run period.

2. The Objective of the Study

As mentioned earlier exchange rate between Bangladeshi taka and USA dollar has been selected for the study since most of the activities in foreign exchange in Bangladesh market are accounted for in \$US. The major objective of the study:

- i. To make forecasting of time series exchange rate of Bangladesh
- ii. To determine whether the model is good for forecasting the short run exchange rate

