Chapter 13

Determining Influencing Factors of Currency Exchange Rate for Decision Making in Global Economy Using MARS Method

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ABSTRACT

The aim of this study is to identify the determinants of US Dollar/Turkish Lira currency exchange rate for strategic decision making in the global economy. Within this scope, quarterly data for the period between 1988:1 and 2016:2 was used in this study. In addition to this aspect, 10 explanatory variables were considered in order to determine the leading indicators of US Dollar/Turkish Lira currency exchange rate. Moreover, Multivariate Adaptive Regression Splines (MARS) method was used so as to achieve this objective. According to the results of this analysis, it was defined that two different variables affect this exchange rate in Turkey. First of all, it was identified that there is a negative relationship between current account balance and the value of US Dollar/Turkish Lira currency exchange rate. This result shows that in case of current account deficit problem, Turkish Lira experiences depreciation. Furthermore, it was also concluded that when there is an economic growth in Turkey, Turkish Lira increases in comparison with US Dollar. While taking into the consideration of these results, it could be generalized that emerging economies such as Turkey have to decrease current account deficit and investors should focus on higher economic growth in order to prevent the depreciation of the money in the strategic investment decision.

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INTRODUCTION

Globalization means that eliminating economic barriers between countries (Dunning, 2002). It was effective almost all over the world especially after 1970. As a result of this aspect, economies of different countries became interconnected. This situation brought many advantages to the countries with respect to the economic growth. On the other hand, globalization also led to many risks for these countries, such as volatility in the market. In other words, economies of the countries became more fragile to the extraordinary changes in other countries owing to the globalization. In addition to the negative effects for the economic stability of the country, these kinds of problems also affect the decisions of the investors negatively (Yüksel et. al., 2015).

Within this context, the stability of the currency exchange rate is very significant for the economies of the countries. The main reason behind this situation is that the exchange rate affects many important factors in the economy such as export, economic growth, and foreign direct investments (Bacchetta and Van Wincoop, 2000). Therefore, countries always prefer a stable exchange rate in order to prevent volatility in the market. Otherwise, countries may experience important losses due to high amount of increase or decrease in the value of exchange rate. In the past, there were many economic crises which were occurred because of this problem. For example, Southeast Asian countries had important losses in 1998 due to the high amount of changes in currency exchange rate (Corsetti et. al., 1999).

Turkey is also a country which experienced two different economic crises in 1994 and 2000. During this period, Turkey had significant amount of losses due to high amount of increase in US Dollar/Turkish Lira currency exchange rate. Many companies went bankruptcy owing to the fact that they cannot manage this increase. As a result of this situation, a lot of people lost their jobs. The effect of this crisis was so severe that lots of banks were taken over by the Savings Deposit Insurance Fund (SDIF) in this period (Yüksel, 2016b).

Because of this situation, it can be said that the studies aimed to identify the determinants of the exchange rate is essential. Parallel to this aspect, the purpose of this study is to define the influencing factors of US Dollar/Turkish Lira currency exchange rate. In order to achieve this objective, Multivariate Adaptive Regression Splines (MARS) method was used in this study. With respect to the originality concept, the most important property of this analysis is that MARS method was used for this subject firstly in this study. As a result of this analysis, it will be possible to make recommendation so as to have more stable US Dollar/Turkish Lira currency exchange rate.

The paper is organized as follows. After introduction part, information about the similar studies in the literature was given. Additionally, the third part gives information about Multivariate Adaptive Regression Splines (MARS) method. In this part, firstly general information and model creation process will be explained. After that, studies in which this method was used will be explained. Moreover, fourth part includes research and application to understand the determinants of US Dollar/Turkish Lira currency exchange rate. Finally, the results of the analysis were given at conclusion.

BACKGROUND

Because the subject of determining the value of the exchange rate is very important, there were many studies in the literature which focused on this subject. Some of these studies were explained on Table 1.
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