ANALYZING FOREIGN EXCHANGE (FX) POSITIONS OF PARTICIPATION BANKS IN TURKEY

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Abstract

This study aims to determine the factors that affect the decisions of the banks related to foreign exchange positions. Within this context, annual data of 4 participation banks (Albaraka Türk, Bank Asya, Kuveyt Türk, Türkiye Finans) of Turkey for the periods between 2005 and 2015 was analyzed in this study. Additionally, panel logit model was used in order to reach the conclusion. As a result of the analysis, it was identified that participation banks prefer to have long position when they are more profitable. Moreover, it was also defined that in case of increase in international reserves of the country and higher stock exchange index, short position is preferred by these participation banks. While considering these issues, it was understood that participation banks opt for having more FX assets than FX liabilities when there is economic stability.

Keywords:Banking;Participation Banks;Turkey;Foreign Exchange Position;Panel Logit.

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1. Introduction

Banking sector plays a key role for the economies. The main reason for this condition is that people who have savings can have a chance to earn money owing to the banks. In addition to this aspect, companies can reach the fund easily in order to make new investment and to satisfy operational needs. Therefore, it can be understood that the decisions of the banks influence many players in the financial market [5].

Defining the foreign exchange position is one of the most important decisions of the bank. Banks sometimes make some operations by using foreign currency. Because of this issue, banks have some FX assets or liabilities. If these FX assets of the banks are higher than FX liabilities, this means that banks have long position. Banks prefer to take position when they expect that foreign currency will appreciate in comparison with domestic currency in the future [9].

On the other hand, if FX liabilities of the banks are higher than FX assets, this issue gives information that banks take short position [8]. This position is preferred by the banks when foreign currency is expected to depreciate. The main reason behind this situation is that if foreign currency becomes less valuable, this means that banks, which have higher amount of FX assets, will get loss. Due to this condition, they opt for having short position.

Furthermore, if FX assets of the banks equal to FX liabilities, this situation explains that banks are in a square position. In other words, when a bank does not have a square position, it means that this bank is subject to the currency risk which means the probability that banks have loss due to the volatility in foreign exchange rate. As it can be understood from the expressions above, the decisions of the banks regarding having foreign currency position is very significant.

While considering these aspects, in this study, we try to analyze the leading factors for the banks in order to define foreign exchange position. For this purpose, we make analysis by using annual data of 4 participation banks for the periods between 2005 and 2015. Also, panel logit model is used for this analysis. As a result of the analysis, it will be possible to understand in which situation banks prefer short or long positions.

Even though there is sufficient literature about foreign currency risks, the literature about bank's foreign exchange positions is insufficient. Owing to this situation, it can be said that this study makes an important contribution to the literature. Demir (2009) emphasized the importance of the banks' decision related to foreign exchange position in his study. Logit model was used in this study in order to achieve this objective. As a result of the analysis, it was concluded that foreign exchange position should be calculated effectively so as to decrease the level of currency risk [4]. In addition to this study, Papaioannou (2006) and Çiftçi and Yıldız (2013) underlined the importance of the risk if banks have too much amount of short or long position [3], [10].

In the literature, there are also some studies which explained the influencing factors of the banks to choose short or long position alternatives. Ata and Arslan (2009) made a study for Turkish banking sector by using Granger causality test. They made a conclusion that current account balance of the countries is the main indicator for the banks to make this decision [1]. Gervais and others (2016) also reached the similar conclusion for Canada by using regression analysis [6]. On the other side, Bulut and Gül (2004) determined that financial performance is a very significant factor in order to make short or long position decision of the banks in Turkey [2].

2. Research Method

2.1. Data

In this analysis, we used annual data of the participation banks for the periods between 2005 and 2015. Additionally, 4 participation banks (Albaraka Türk, Bank Asya, Kuveyt Türk and Türkiye Finans) were analyzed in this study. Moreover, we used both bank-specific and macroeconomic variables in order to reach the objective. Bank-specific data was obtained from the website of Turkish Participation Banks Union whereas the data for macroeconomic variables was provided from the website of World Bank.

2.2. Variables

In this study, we try to identify the important factors that influence the decisions of the banks related to foreign exchange position. Therefore, foreign exchange rate position will be the dependent variable in our analysis. Within this context, if banks take long position, this dependent variable takes the value of "1" while it will be "0" when the position is short.

In order to understand the aspects that are effective in banks' foreign exchange position decision, we used 12 independent variables. The details of these variables were explained on table 1.

Table 1. The List of Explanatory Variables

Types of the Variables	Variables
Specific for the Banks	Total Assets
	Total Loans
	Nonperforming Loans
	Total Deposit
	Total Capital
	Net Profit (Loss)
Macroeconomic	Growth Rate
	Inflation Rate
	Interest Rate
	BIST 100 Index
	Current Account Deficit
	Foreign Exchange Reserves

Out of these variables, 6 variables are specific to the banks whereas there are also 6 macroeconomic variables. As for bank-specific variables, the value of total assets shows the size of the banks. Furthermore, the variables of total loans and total deposits give the similar information. Also, non-performing loans are the loans that cannot be paid by the customers to the banks and net profit shows the financial performance of the banks. Moreover, capital refers to the amount that can be used in a financial difficulty.

On the other hand, with respect to the macroeconomic variables, growth rate means the percentage change in the amount of gross domestic product. Additionally, because inflation and interest rate affects the amount of foreign currency, it will also be effective to banks' decision for foreign exchange positions. Furthermore, BIST refers to Borsa Istanbul, formerly known as

Istanbul Stock Exchange Market. Moreover, current account deficit is the situation in which import amount of the country exceeds export amount. Finally, foreign exchange reserves are the amount of central banks in foreign currencies.

2.3. Panel Logit Method

Logit model is the model in which dependent variable takes only two different values, such as "0" and "1". In logit model, logistic distribution function is used in order to satisfy this requirement. The details of this function are emphasized below.

$$F(Y_i) = 1 / (1 + e^{-Y_i}) = 1 / (1 + e^{-(B0 + BiXi + \varepsilon i)})$$

In the equation above, "Y" refers to the dependent variable whereas "X" means independent variables. In addition to them, "ε" explains error term whereas "B" demonstrates coefficient of independent variables. Furthermore, the term "e" equals to the value of 2.72. Because it is greater than 0, this equation will always be positive as well. Also, since the term "e" is in the denominator of the equation, the result will be less than 1 [7]. The precondition of the logit analysis is that the data should be stationary. For this purpose, unit root tests should be performed.

3. Results and Analysis

In the first stage of the analysis, we made a unit root test for explanatory variables. Within this context, Phillips Perron unit root test was used. The details of this test were given on table 2.

Table 2. Phillips Perron Unit Root Test Results

Types of the Variables	Variables	Level Value (Probability)
Specific for the Banks	Total Assets*	0.7513
	Total Loans	0.0059
	Nonperforming Loans*	0.9247
	Total Deposit*	0.9563

	Total Capital	0.0000
	Net Profit (Loss)*	0.8844
Macroeconomic	Growth Rate	0.0000
	Inflation Rate	0.0123
	Interest Rate*	0.6668
	BIST 100 Index	0.0114
	Current Account Deficit*	0.0090
	Foreign Exchange*	0.4772

*The first of these variables were used in the analysis.

As it can be seen from table 2, the probability values of 5 explanatory variables are less than 0.05. This condition refers that they are stationary at their level values. On the other side, because the values of other 7 independent variables are more than 0.05, the first difference of them was used in the analysis. After satisfying this requirement, we made a logit analysis so as to understand the foreign exchange position decisions of the banks. The results of the logit analysis were detailed on table 3.

Table 3. Logit Analysis Results

Variables	Coefficient	Probability Values
Total Assets	-14.01	0.4952
BIST 100 Index*	-0.01	0.0975
Growth Rate	0.25	0.4744
Current Account Deficit	0.27	0.6029
Interest Rate	-0.93	0.1363
Foreign Exchange*	-0.01	0.0266
Net Profit (Loss)*	0.01	0.0353

*Significant at 10% significance value.

We had to eliminate the variables of "total loans", "non-performing loans", "total deposits", "total capital" and "interest rates" from the analysis due to the multicollinearity problem. Table 3 shows the condition of preferring to have long positions by the banks. As it can be seen from table 3, probability values of 3 independent variables (BIST 100 index, international reserves and net profit) are less than 0.1. This situation means that these 3 variables are significant to explain the preference of participation banks in Turkey with respect to the decision of foreign exchange position.

First of all, it can be said that there is an inverse relationship between the value of BIST 100 index and having long position because the coefficient of BIST 100 index is negative (-0.01). This result refers that when BIST 100 index increases, banks prefer to have more short position. The main reason behind this situation is that in case of BIST 100 index increase, banks think that economy will be more stable, so local currency will appreciate.

Another result of this study is that there is a negative relationship between international reserves and banks' long position amount. When there is a decline in international reserves of a country, foreign currency will be more valuable. In other words, domestic currency will depreciate in case of any decrease in international reserves. Owing to this situation, banks will prefer to have lower amount of FX liabilities in comparison with FX assets. Finally, it was also identified that there is a positive relationship between net profit amount and the preference of having long position by the banks. In other saying, banks, which have higher amount of profit, tend to have more long positions.

4. Conclusion

In this study, we aimed to identify the influencing factors of the decisions of the banks with respect to the foreign exchange position. Within this scope, 4 participation banks (Albaraka Türk, Bank Asya, Kuveyt Türk, Türkiye Finans) of Turkey were taken into the consideration in the study. In addition to this situation, annual data for the periods between 2005 and 2015 was analyzed by using panel logit model so as to achieve this purpose.

In the analysis, first of all, we tried to define whether explanatory variables are stationary or not. For this purpose, these variables were tested by using Phillips Perron unit root test. As a result, it was determined that 5 explanatory variables are stationary whereas 7 independent variables are not. Thus, we used the first difference of these variables in the analysis.

After stationary analysis, panel logit analysis was performed to determine the leading factors of banks' foreign currency preferences. According to the results of the analysis, it was identified that 3 independent variables (BIST 100 index, international reserves and net profit) affect these preferences. First of all, it was defined that banks, which have higher amount of profit, prefer to have long positions.

Another important conclusion of this analysis is that there is a negative relationship between the value of BIST 100 index and having long position. The main reason behind this situation is that in case of BIST 100 index increase, banks think that economy will be more stable, so local currency will appreciate. Finally, it was also concluded that when there is a decline in international reserves of a country, domestic currency is expected to depreciate. Because of this issue, banks prefer to have lower amount of FX liabilities than FX assets in order not to get loss.

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