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Impact of Short-term Interest Rate on Exchange Rate: The Case of Turkey

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Abstract

After the crises in 2001 inflation targeting regime has been adopted and short-term interest rates have been used as the main monetary policy tool in Turkey. In addition, Central Bank of the Republic of Turkey (CBRT) utilizes short-term interest rates against the sudden rises in dollar rate. In this context, we aim to determine the efficient level of short-term interest rates on dollar rate. Accordingly, using monthly data for the period of 2003:02 – 2015:08, we find no evidence that higher interest rates cause to a weakening of exchange rate, by the frequency domain Granger causality test.

1. Introduction

Exchange rates fluctuations is one of the main obstacles that developing economies confront in the macroeconomic management. Especially during the economic crisis periods this subject gains more importance in terms of cost and duration of the recovery process. Interest rate is, among other monetary policy instruments, constitutes an important part of policy variables in coping with unintended exchange rate fluctuations. In this regard, despite to the conflicting empirical findings, there is a common belief as that tight monetary policy and higher interest rate do help in stabilizing exchange rates.

Goldfajn & Baig (1998) distinguish four building blocks for the analysis of the appropriate monetary policy to be adopted in the aftermath of a currency crisis. The first block is to search if the real exchange rate has become depreciated and should be brought back to equilibrium level. The second block is to identify the relevant

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mechanisms through which the real exchange rate could be corrected in case it is depreciated. The third block is related to identify the appropriate policies and circumstances that help the reversal through nominal appreciation. In this regard, it should be evaluated whether nominal appreciations occur when interest rates are kept high. Finally, the fourth block is to evaluate the probable consequences of raising interest rates. Expected gains from the effect of raising interest rates on the exchange rate can be canceled out by the costs that arising from raising interest rates such as output loss, increased unemployment rate and financial system fragility.

Central bankers of developing countries face further challenges than developed countries across exogenous monetary shocks. Two of these challenges are closely related: the problem of currency substitution and central bank's motive for monitoring foreign exchange reserves. First, as regards currency substitution, the public may prefer using foreign currency rather than to use domestic currency so that to guard themselves against the eroding effect of inflation. If domestic interest rates go at lower pace or if the domestic currency depreciates considerably, agents like to hold more of their wealth in foreign currency than in domestic currency. Second, in order to reduce the risk of speculative attacks or a probable balance of payment crisis, central banks closely monitor foreign exchange reserves. Central bank will increase its exchange reserves as domestic interest rates increase and decrease as the return on foreign exchanges increases. Thus, central banks may use both the interest rate and exchange rate policies to achieve their goals (Berument, 2007: 412).

In Turkey, some economists argued that exchange rate depreciation observed over the 2003 – 2013 was due to high interest rates and the Central Bank should have reduced the short-term interest rates more quickly and larger extend. In contrast, the Central Bank put forward that the relationship between short-term interest rates and exchange rates has a multi-dimensional and complex nature, and it was not guaranteed to appreciation in exchange rates by reducing the interest rates (Karaca, 2005).

Rest of the paper is organized as follows. In the next section, the theoretical and empirical aspects of the relationship between interest rates and exchange rate are reviewed. In the third section, details of the methodological procedure are explained. Result of the causality analysis is given in the fourth section. The paper concludes in the fifth section.

2. Theoretical Background and Related Literature

The relation between interest rates and exchange rate has been subject to intense debate among economists both theoretically and empirically. As Furman & Stiglitz (1998) pointed out there has been no shortage of opinions about the role of interest rates policies in stabilizing exchange rates, but in general they do not rest on a well-supported body of theory or evidence.

Generally, a contemporaneous relationship is assumed between interest rates and exchange rate. This belief is only warranted under certain circumstances. Using the uncovered interest parity framework,

$$i_t - i_t^* = E(e_{t+1}) - e_t + RP_t$$

where i_t is the domestic interest rate at time t, i_t^* is the foreign interest rate at time t, e_t is the domestic exchange rate at time t, $E(e_{t+1})$ is the expected exchange rate at time $t + 1$, and RP_t is the country risk premium which incorporates both the exchange risk premium and the default risk premium on domestic bonds. According to this framework, an increase in the domestic interest rates will reduce e_t, i.e. appreciate current exchange rate if i_t^* and $E(e_{t+1})$ are kept constant. This is explanation is proposed by the traditional view.

On the other hand, it is hard to remain as constant of $E(e_{t+1})$ and RP_t along the crisis period. Increases in the interest rates may cause to increase in the borrowing costs, induce bankruptcies, weakening the banking system, worsening the financial situation and leading to capital flight. Therefore, a rise in the risk premium can lead to a rise in interest rates. According to the uncovered interest parity equation given below, RP_t increases as i_t increases and if this increase reach to a threshold level, it can be resulted in an increase in e_t. This mechanism is called as the perverse effect which is advocated by the revisionist view (Gümüş, 2002). The debate between these two approaches emerges apparently in theories of flexible-price and sticky-price monetary model, where the relationship between interest rates and exchange rate differentiates (Seleem, 2013: 4).

In the related literature the subject has been searched in the context of currency crises and East Asian currency crisis in 1997 has given momentum to studies on this issue. As the exchange rate began to depreciate at the early