



ECON 484-MACHINE LEARNING

DEPARTMENT OF ECONOMICS

VARIABLES INVOLVED IN THE FLUCTUATION OF THE DOLLAR EXCHANGE
RATE

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I. ABSTRACT

Turkey, which switched to the presidential system in 2018, faced some decreases and increases in macroeconomic indicators. The first of these was a noticeable decrease in reserves at the central bank. While this decrease gradually caused a sharp increase in the exchange rate market, it caused the Turkish economy to reach a fragile level and the inflation rate to increase. In this study, the reasons for the fluctuations in the exchange rate in the period from April 2020 to April 2022 were examined in detail.

II. INTRODUCTION

The Bretton Woods monetary system, which first emerged as a dollar index, completely lost its validity in the world foreign exchange markets at the beginning of the 1970s. In the aforementioned period, the volatility of exchange rates increased after the national currencies were left to float against the US dollar. Along with this, uncertainty started to dominate the foreign exchange markets. In the face of this situation, it has become very difficult to predict the value of the country's currencies in the future. Since the very beginning of the 1980s, the new economic structure, which is characterized by the changes in the world economies and globalization, has formed economic structures that are interconnected and affected by external developments.

With the acceleration of global capital movements, the effects of monetary policies implemented by central banks on economies began to weaken. Therefore, the macroeconomic indicators of the country's economies were negatively affected by the fluctuations and fluctuations in the exchange rate. Movements in import prices, especially in exchange rates, were among the main factors determining short-term inflation dynamics in open and small economies that implement inflation targeting. As a result of these effects, some macroeconomic

indicators increase or decrease the value of the national currency, causing exchange rates to fluctuate regularly.

To summarize, the increase in volatility in exchange rates in the Turkish economy, which started in 2018 and continued until 2022, and even the changes in exchange rates against the Turkish lira have made the issue of which factors affect the exchange rate even more important.

III. MODEL, DATA AND METEDOLOGY

The 2-year data set consisting of 24 observations covering the period 2020:04-2022:04 was collected through the Electronic Data Distribution System (EVDS) of the Central Bank of Turkey. The stages followed when creating the Cubic spline chart: Dataset obtained is checked to make sure whether the numbers loaded correctly. The x values are collected from the first column of excel. The data ranged from 1 to 24 Decibels. That is why it is limited to "0:25". The y values are collected from the second column of excel. The data ranged from 1 to 24 Decibels. That is why it is limited to "0:25". Since the date data is large enough, it was necessary to expand the size of the chart. The chart points are joined by a straight line. The graph x and y values are named as they should be. Finally; The background grid was applied.

The year 2020 was marked by the negativities experienced in the economy and sectors due to the pandemic, the support steps taken in this process, the important changes in the economy team, including the Minister of Treasury and Finance and the President of the CBRT. First of all, after the transition to the Presidential system in 2018, Turkey's economic stability began to decline rapidly. With the unexpectedly emerging pandemic (Covid-19), government expenditures rose rapidly, but Turkey was caught unprepared for these situations.

The economic confidence index data for July increased by 11.8 percent compared to June and rose to 82.2, and increased by 3.1 percent on a monthly basis in September to 88.5.

Exports in June increased by 35 percent compared to May and by 15.8 percent compared to the same month of 2019. Although stimulus programs and the opening of publicly funded credit taps accelerated the economic recovery, they also caused sharp pressures on inflation and the exchange rate. In this process, the slow act of the Central Bank in tightening monetary policies was another factor that led to the rise in inflation. Inflation, which tended to decrease despite the growth in the first quarter, started to rise despite the economic contraction after May, when the corona virus epidemic was heavily felt. The consumer price index rose to 14.03 percent on an annual basis in November, reaching the highest level of the year.

The policy rate was increased to 15 percent in November 2020 and to 17 percent in December 2020. Naci Ağbal, the Chairman of the Central Bank, was dismissed after the decision to increase the interest rate by 200 basis points to 19 percent in March. While historical peaks were observed in the foreign exchange markets in 2020, we witnessed that the monetary policy was completely changed in order to reverse this picture, and that the period of high interest rates was returned again.

In Turkey, the dollar had been at a high rate for a long time, but the dollar fell after the inflation report and monetary tightening statements by the CBRT Chairman Ağbal. In January, the dollar fell to 7.40 - 7.50 and was 7.17 in the first two trading days of February. up to now. After Ağbal said that the interest rate cuts are premature and that in case of deviations in the inflation targets, there could be a tightening in the front, the appreciation in the TL increased. However, the decrease in the value of the dollar continued. In the third month of 2021, the dollar started to gain value again. As a result of the new policies, the dollar value has risen a lot.

Despite high inflation, the Central Bank's low interest policy has led to an increase in the pressure on the Turkish Lira. After the exchange rate crises in both 2018 and 2021, the Turkish economy has become more vulnerable to fluctuations in the exchange rate due to the

decrease in reserves and the fact that the economy is indexed to foreign currency. It was reduced by another 100 basis points to 14 percent on December 16, 2021. The reason for the dollar to gain value in this way is the interest policy applied. One of the policies that should be implemented in a country with a bad interest rate, especially in a developing country, is to raise the interest rate, but in Turkey, the interest rate is tried to be kept low, which causes high inflation by increasing the dollar value.

The economic crisis in Turkey began in September 2021, with the first interest rate cut; since February 2022, it has been deepening with the Russia-Ukraine war, while the dollar exchange rate has continued to rise. Furthermore, in order to keep the dollar exchange rate below the 13 band, approximately \$ 1.5 billion was spent on reserves, despite the fact that the dollar exchange rate continued to rise.

The 'Currency Protected Deposit' system was implemented to prevent the dollar exchange rate from bouncing up and to increase reserves. The first payments of the Currency protected deposit system, however, made in March 2022, imposed a significant burden on the treasury. This situation, combined with the pressure to expand the money supply, has continued to raise the dollar exchange rate through inflation.

IV. CONCLUSION

It is an ongoing economic crisis in Turkey with international repercussions due to financial contamination. The depreciation of the Turkish lira, high inflation, rising debt and corresponding credit defaults are the prominent features of the crisis. The crisis started to become apparent as the lira depreciated greatly in fluctuations after sharp increases in the exchange rate, and in the next stage, it reached a deeper dimension with unpaid debts and economic contraction. Stagflation emerged as the inflation rate stuck in double digits. For the first time in the history of the Republic, the public interest debt exceeded the principal debt. Many economists argue that in order to get rid of this historical crisis, the presidential system should be abolished and the opposite of everything that has been done should be put into practice.

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