NEW MONETARY ANALYSIS TOOL (THE DAILY LIQUIDITY DATASET)

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Abstract

The term of liquidity is complex and unclear concept in the economic literature. This paper tries to explain this concept in practice for Turkish economy. The statistics of EFT (Electronic Fund Transfer) system and Central Bank of Turkish Republic's analytical balance sheet are used to explain what the liquidity is and how the liquidity situation changes in the Turkish financial system. The liquidity is classified as "market liquidity". The EFT system is used to materialize the market liquidity and the statistics of EFT system are used to explain the volume of market liquidity. The statistics of Central Bank of Turkish Republic's analytical balance sheet are utilized for illustrating the liquidity situation which is originated from market liquidity. The daily liquidity dataset for Central Bank of Turkish Republic is created and the determinants of the liquidity situation are analysed from perspective of analytical balance sheet. This study identifies that the increase in the currency issued and government sector deposits are main determinants of the liquidity deficit and also concludes that the liquidity surplus results from the increment in net foreign assets and domestic assets. Most importantly, this article shows that Central Bank of Turkish Republic takes a countercyclical position against both the liquidity deficit and liquidity surplus between 2013 and 2018 (except 2016).

Keywords: *central bank balance sheet, monetary policy, liquidity management*
JEL Classification: *E50, E52, E5*

The Central Bank as an institution is one of the most powerful institutions in the world financial system. The Central Bank deserves this vigorous position through its “monopolized authority” role in printing banknotes, its “lender of last resort” role and its “settlement bank” role among financial institutions in the economy. The economic literature traditionally focuses on the “monopolized authority” role of central banks and it has specifically concentrated on the “lender of last resort” role of central banks in the last decade. The “settlement bank” role of central banks is mostly ignored in the literature. On the other hand, this role is a fundamental tool for explaining the concept of liquidity in practice.

Central banks and payment systems evolved together, and many early central banks were founded as payments institutions (Kahn, Quinn, & Roberds, 2014). The Bank of Amsterdam is known as the first central bank in world financial history. The Bank of Amsterdam opened bank accounts for merchants and these merchants settled obligations between themselves by using their accounts at the central bank. One merchant could make a payment to another simply by arranging for his account at the bank to be debited and the counterparty's account to be credited (Ferguson, 2009) . The settlement bank role increased the financial transactions in the economy. In the course of time, central bank money started to be used for settlement purposes, and central banks started to provide liquidity to these accounts during problematic or crisis situations.

This basic settlement process evolved to the RTGS (real-time gross settlement) system in time. One hundred and twelve of the 142 central banks indicate that the RTGS system is a feature of their national payment systems (Massimo Cirasino & Garcia, 2008). It is important to note that the financial institutions (which are accepted by central banks) are able to participate in this system. The liquidity in the economy, monetary transactions, move in this

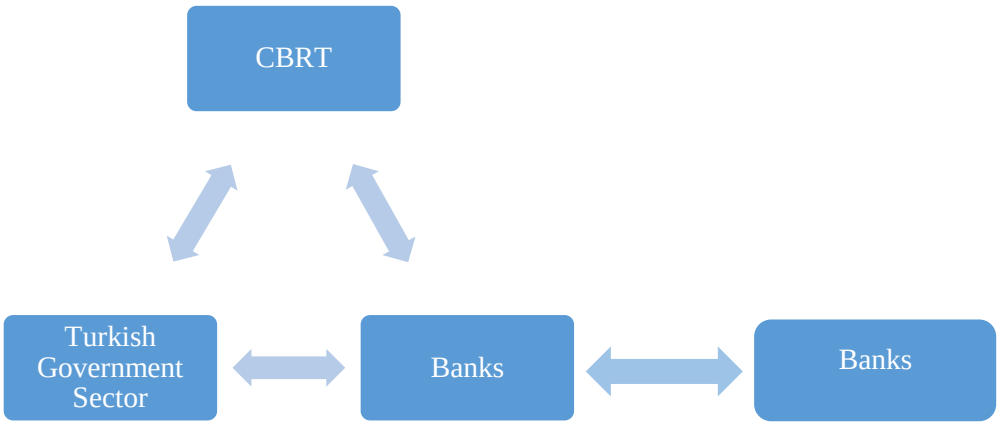
system among the participant financial institutions. The details of the transactions are not published for the public and generally just the total daily amount of the transactions is published. On the other hand, Central Banks' balance sheets have a lot of information in terms of understanding the liquidity mechanism in practice. It can be said that Central Banks' balance sheets classify some transactions of the RTGS system which are related to the bilateral transactions between banks and the Central Bank and between banks and the government sector. The account of the bank reserves holds a key position in this analysis because the transactions between the banks and other two institutions (the Central Bank and the government sector) are realized by means of this account in Central Banks' balance sheets.

This article attempts to find out what liquidity is and how the liquidity situation changes in the case of the Turkish economy. For this reason, the daily liquidity dataset has been created for the CBRT (Central Bank of Turkish Republic). This daily dataset helps us to understand how the liquidity situation changes in the Turkish economy, how the CBRT reacts to the liquidity situation and how the account of bank reserves changes on a daily basis.

This paper is organized as follows: liquidity is defined in the first section, the main assets and liabilities of the CBRT's analytical balance sheet are examined in the second section, the determinants of the liquidity situation are inspected in the third section, the fourth section answers the question of how the liquidity situation can be determined from the CBRT's analytical balance sheet and a general assessment of the liquidity situation is realized in the fifth section. The conclusions are provided in the final section.

1.What Is Liquidity?

Liquidity is a very confusing concept and notion in the economic literature because economists generally have tended to understand/describe liquidity from their individual search perspective. This article focuses on the volume based description of liquidity[1], and this is named as "market liquidity". The analysis which is realized in this article is based on this definition. Market liquidity originates from the very complex relationship among the financial actors. One part of market liquidity results from the unilateral and bilateral monetary transactions among the banks, and the other part stems from the unilateral and bilateral monetary transactions between the CBRT, banks and the Turkish government sector in the specific case of the Turkish economy.



Note: Author's own schematization.

Figure 1. Schematic Representation of Market Liquidity in the Turkish Economy

Figure 1 represents the schematic structure of market liquidity in the context of the Turkish economy[2]. This representation can be summarized as follows: The CBRT provides credits to the banks, the banks pay back credits to the CBRT, the government sector realizes

[1] Lybek & Sarr (2002) presented the more detailed definitions for calculating the liquidity.
[2] Federal Reserve Bank of New York, the Payments Risk Committee (2016) realized the important study in this issue for USA.

the salary payments in the banking system, the banks purchase the government bonds, the government sector holds its deposit in the CBRT, ‘x’ bank’s customer pays to ‘y’ bank’s customer, ‘y’ bank lends cash money to ‘x’ bank and the CBRT transfers some part of its profit to the government sector. Market liquidity moves on the real-time gross settlement system in the economy and this situation is exactly depicted in Figure 1. This market liquidity turns to deficit or surplus, depending on the character of the transactions, at the end of each day. The abovementioned deficit or surplus is called “the liquidity deficit or the liquidity surplus” in this article.

Bank reserves also plays an important role in the balance sheet because the banks realize their transactions with two institutions (the CBRT and the Turkish government sector) through this account. The term bank reserves is exactly materialized in the account of the Deposits of Banking Sector in the CBRT’s balance sheet. The change in bank reserves depends on the liquidity situation (liquidity deficit or liquidity surplus) and the CBRT’s open market operations. It is noted that the open market operations are executed during the day. In this sense, the CBRT forecasts the amount of the liquidity deficit or liquidity surplus days in advance and the volume of the open market operations are decided previously.

Note: Author’s own schematization.

Figure 2. Liquidity, Open Market Operations and Change in the Bank Reserves in the CBRT’s Analytical Balance Sheet

Figure 2 highlights that the change in bank reserves results from the open market operations and the liquidity deficit/surplus in the analytical balance sheet of the CBRT. The variation in bank reserves can be estimated with wide confidence intervals, for the simple reason that open market operations of the CBRT are based on forecasting.

Most of the Central Banks in the world have carried out their settlement role in the economy with the help of the RTGS system. This system is the corner stone in realizing unilateral and bilateral transactions among the financial system actors in the economy. The market liquidity which is depicted in Figure 1 can be observed in the RTGS system during the day. The data shown in Figure 2 can be viewed from the RTGS system at the end of the day. Just as the other central banks do, the CBRT publishes limited data from this system. If the CBRT published all the RTGS data, the details of the market liquidity and liquidity situation (deficit or surplus) would be seen quite easily. However, the CBRT only publishes limited data from the RTGS system. The Central Bank of Turkish Republic uses the RTGS system under the name of the Electronic Fund Transfer (EFT) system. The EFT system provides real time transfer and real time gross settlement of Turkish Lira interbank payments (CBRT, Electronic Fund Transfer System-Electronic Securities Transfer System, 2019).There are 52 participant banks[3] in this framework in Turkey.

[3] CBRT Payment Systems Participant List, http://eftemkt.tcmb.gov.tr/bankasubelistesi/KATILIMCI_LISTESI_ENG.PDF

Table 1

Electronic Fund Transfer (EFT) System, Total Value of Payments, (TL) (2013-2018) (Daily Average)

Year	Total Value of Payments
2013	124.969.007.592
2014	137.450.943.424
2015	141.166.556.962
2016	154.426.689.721
2017	247.941.764.495
2018	281.647.927.323

Source: CBRT Statistics, Electronic Fund Transfer (EFT) System (Total Value of Payments), (TP.EFTEMKT2.TUTAR.A01), https://evds2.tcmb.gov.tr

Table 1 shows the daily average total value of payments in the EFT system between 2013 and 2018. The daily average amount of market liquidity was 124 billion TL in 2013, this volume increased to 281 billion TL in 2018. The market liquidity is precisely materialized in Table 1 through the total value of payments' data of EFT system. It should not be forgotten that the participant banks have to use their reserves for realizing unilateral and bilateral transactions in this system.

Table 2

Bank Reserves in the Central Bank of Turkey Republic, (TL) (2013-2018) (Daily Average)

Year	Total Amount
2013	16.086.107.000
2014	21.595.048.000
2015	18.799.107.000
2016	44.343.746.000
2017	41.961.367.000
2018	50.277.728.000

Source: CBRT Statistics, Deposits of Banking Sector, (TP.AB.A18), https://evds2.tcmb.gov.tr

The daily average amount of the bank reserves in the Central Bank of Turkish Republic between 2013 and 2018 is viewed in Table 2. Banks reserves are precisely central bank money because it is created by the CBRT. However, this money is not enough for executing all the transactions in the EFT system during the day and therefore participants need to use their cash accounts, the interbank lending operations and the CBRT's intraday liquidity in this framework. This system is based on the central bank money; however, this system needs banks' own money and other sources for fulfilling the transactions in the EFT system. Commercial bank money provides the means to perform most economic transactions, but central bank money remains at the root of the system, because it provides the final means of settlement (Gaspar & Daniela, 2006). The volume of market liquidity is obtained from the EFT system, however, it is impossible to understand how the liquidity situation changes in the Turkish financial system with this limited information. As a consequence, the EFT is a closed book and only little information is shared with the public in Turkey.

2.The Central Bank of Turkish Republic's Analytical Balance Sheet

The question of how the liquidity situation changes in the Turkish economy can be answered through the CBRT's analytical balance sheet. The items on the assets and liabilities sides of the CBRT's balance sheet are netted in the analytical balance sheet and it is constituted to state the monetary aggregates by aggregating and netting the CBRT's balance sheet items (CBRT, CBRT Analytical Balance Sheet, 2019).

Table 3

CBRT's Analytical Balance Sheet

ASSETS	LIABILITIES
- Foreign Assets	- Total Foreign Liabilities
	- Central Bank Money
	- Currency Issued
	- Deposits of Banking Sector
	- Extra Budgetary Funds
- Domestic Assets	- Deposits of Non-Bank Sector
	- Open Market Operations
	- Deposits of Public Sector

Source: CBRT Statistics, Central Bank Analytical Balance Sheet, https://evds2.tcmb.gov.tr/index.php?/evds/DataGroupLink/2/bie_abanlbil/en

Table 3 illustrates the CBRT's analytical balance sheet from the aspect of its main assets and main liabilities. Its main assets constitute foreign assets and domestic assets. Foreign assets demonstrate the CBRT's assets in terms of foreign currency. Domestic assets indicate the amount of government debt securities which is held by the CBRT and the CBRT's credits (export rediscount credits) to the banks. The liabilities side of the balance sheet includes important accounts for the analysis of the liquidity situation. Total foreign liabilities are the CBRT's foreign currency liabilities to non-residents and residents (Banks

and the Turkish government sector). The CBRT's local money liabilities are shown under the account of Central Bank Money. This account is composed of the currency issued, deposits of the banking sector, extra budgetary funds, deposits of the non-bank sector, open market operations and deposits of the public sector. The deposits of the banking sector represents the bank reserves in the balance sheet.

3.The Determinants of the Liquidity Situation

This section investigates how the CBRT's main assets and liabilities affect the direction and the volume of the liquidity situation (liquidity deficit or liquidity surplus). There are limited works in this area and most of them are realized by Central Banks. These limited works are to explain the Central Banks' liquidity management and liquidity forecasting. Bindseil (2000) analyze the liquidity management in practice in the case of the Eurosystem. Gray (2008) explains how the Bank of England realizes the liquidity management and liquidity forecasting. Aamodt & Tafjord (2013) discuss the factors that influence bank reserves in Norwegian banking system. Robertson (2017) focuses on the exogenous drivers of the liquidity position in the Australian economy.

The currency issued is one of the most important determinants of the liquidity situation in the balance sheet. In simple terms, it is a transfer from the CBRT to the participant banks in this framework. When the amount of currency issued is increased, this results in decreasing the liquidity (the liquidity is withdrawn from the system). A commercial bank may request to purchase banknotes from the Central Bank on behalf of the public, and the settlement of these purchases occurs in bank reserves, liquidity is reduced when the commercial bank's account (bank reserves) is debited (Robertson, 2017).

The local money deposits of the government sector are followed in the account of deposits of public sectors and a large amount of these deposits belongs to the Republic of Turkey Ministry of Treasury and Finance (TMTF). The collecting of tax revenues by the TMTF or the issuing of government securities by the TMTF leads to the increase in public sector deposits and the decrease in liquidity. The realizing of government expenditures by the TMTF or the government securities redeemed at maturity results in declining public sector deposits and rising liquidity (the liquidity is injected into the system).

The effect of the CBRT's foreign assets and foreign liabilities on the liquidity situation can be analyzed through net foreign assets. The net foreign assets are equal to the difference between foreign assets and foreign liabilities in the analytical balance sheet. When the CBRT buys foreign currency from the participant banks, this causes an increment both in net foreign assets and liquidity. When the CBRT sells foreign currency to the participant banks, this leads to a decrease both in net foreign assets and liquidity.

The change in domestic assets is another important factor in determining the liquidity situation. The buying of government securities by the CBRT or the granting of credits to the participant banks by the CBRT leads to a rise both in this account and in liquidity. The selling of government securities by the CBRT or the paying back of credits to the CBRT by the participant banks leads to a decrease both in domestic assets and liquidity.

Bank reserves are the deposits which banks hold in the CBRT and these reserves can be classified as required (compulsory) reserves and excess (free) reserves. However, some central banks do not impose an obligation on banks to hold the required reserves. The CBRT imposes such a requirement on banks and the account of bank reserves is composed of both the required reserves and excess reserves in the CBRT's balance sheet. The participant banks'

liabilities are subject to the reserve requirements, and the CBRT determines the ratios of reserve requirements for several liabilities of the participant banks. The TL required reserves are held in the cash accounts of the CBRT and at an average of fourteen-day periods (Güler, Şenel Tabak, & Ünalmış, 2017). The CBRT easily forecasts the amount of liquidity deficit or liquidity surplus which results from the change in the required reserves. Excess reserves are bank reserves in excess of a reserve requirement set by a central bank (Scott, 2009). The CBRT does not publish the amount of the required reserves in its balance sheet and the sum of two different reserves (required and excess) is shown in the "Deposits of Banking Sector" account in the CBRT's analytical balance sheet. It is not possible to find out the amount of the required and excess reserves from the balance sheet, but these amounts can be found out through the required reserve dataset of the CBRT[4] and the account of deposits of the banking sector in the balance sheet[5]. When the amount of required reserves is increased, this results in a declining in liquidity. In the contrary case, it leads to an increase in liquidity.

Open market operations are a significant tool within monetary policy implemented by the CBRT operations. These were conducted mainly by means of repo auctions (CBRT, CBRT's Open Market Operations, 2019) in the Turkish economy during the period of 2013-2018. Open market operations target the expected liquidity deficit or surplus at the end of each day. It is important to state that liquidity deficit or surplus could not be compensated totally by CBRT operations at all times. There are two specific reasons. The first reason is that the CBRT could not correctly forecast the liquidity situation. The second reason is that the CBRT's target for the bank reserves corresponds to the actual liquidity situation. For instance, if the CBRT targets the increment in bank reserves, it does not realize open market

[4] Required Reserve Dataset of CBRT, http://www.tcmb.gov.tr/wps/wcm/connect/EN/TCMB+EN/Main+Menu/Statistics/Banking+Data/Required+Reserve

[5] It is available upon request from the author.

operations in the case of liquidity surplus. Similarly, if the CBRT targets the shrinkage in bank reserves, it does not realize open market operations in the case of liquidity deficit.

Table 4

The Liquidity Situation and Bank Reserves in the Perspective of the CBRT's Balance Sheet

	Liquidity Deficit	Liquidity Surplus
Net Foreign Assets		
Domestic Assets		
Currency Issued		
Government Sector Deposits		
Required Reserves		
NET	Deficit | Surplus in Liquidity	
Open Market Operations	Liquidity Supply	
Bank Reserves	Increase | Decrease in Bank Reserves	

Source: Author's own conceptualization.

The hike in the currency issued, government sector deposits and required reserves leads to liquidity deficit whereas the increase in net foreign assets and domestic assets results in liquidity surplus. Table 4 schematizes the effects of the CBRT's assets and liabilities on the liquidity situation and indicates that the change in bank reserves results from the liquidity situation and open market operations.

4.The Determination of the Liquidity Situation

Central Banks which publish their daily liquidity dataset are as follows: European Central Bank[6], Russian Central Bank[7], Norwegian Central Bank[8], Japan Central Bank[9], Central Bank of Hungary[10] and Reserve Bank of New Zealand[11]. The daily liquidity dataset helps to answer the following questions:

- Is there liquidity deficit or liquidity surplus at the end of the day?
- What are the determinants of the liquidity deficit or surplus?
- What is the direction of open market operations?
- How do bank reserves change?

This article tries to answer the abovementioned questions in the period of 2013-2018 in the specific case of the Turkish economy. The year 2013 was determined as the starting date because the FX revaluation account has been tracked as an independent account on the assets side of the CBRT's analytical balance sheet since the year 2013. The dataset is collected from CBRT Statistics on a daily basis. This dataset covers 1,563 workdays and there is no information for 55 workdays (National holidays, etc.).

[6] It is available on the web site (https://www.ecb.europa.eu/stats/policy_and_exchange_rates/minimum_reserves/html/index.en.html)
[7] It is available on the web site (http://www.cbr.ru/eng/statistics/Default.aspx)
[8] It is available on the web site (https://www.norges-bank.no/en/Statistics/Bank-liquidity/)
[9] It is available on the web site (http://www.boj.or.jp/en/statistics/boj/fm/juqf/index.htm/)
[10] It is available on the web site (https://www.mnb.hu/en/monetary-policy/monetary-policy-instruments/liquidity-forecast)
[11] It is available on the web site (https://www.rbnz.govt.nz/-/media/ReserveBank/Files/Statistics/tables/d10/hd10.xlsx)

Table 5

CBRT's Analytical Balance Sheet (2013-2018)

ASSETS	LIABILITIES
A.1-Foreign Assets (Thousand TL)	P.1-Total Foreign Liabilities (Thousand TL)
A.2-Domestic Assets (Thousand TL)	P.2Aa-Currency Issued (Thousand TL)
A.3-FX Revaluation Account (Thousand TL)	P.2Ab-Deposits of Banking Sector (Thousand TL)
	P.2Ac-Extra Budgetary Funds (Thousand TL)
	P.2Ad-Deposits of Non-Bank Sector (Thousand TL)
	P.2Ba-Open Market Operations (Thousand TL)
	P.2Bb-Deposits of Public Sector (Thousand TL)

Source: CBRT Statistics, Central Bank Analytical Balance Sheet, https://evds2.tcmb.gov.tr/index.php?/evds/DataGroupLink/2/bie_abanlbil/en

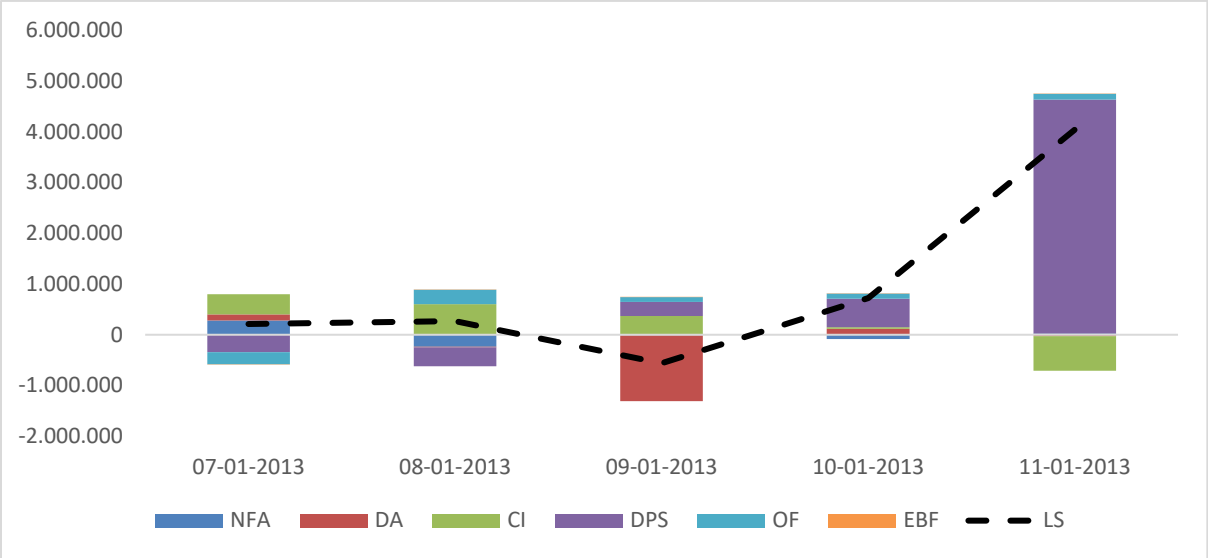
Table 5 exhibits the assets and liabilities of balance sheet which are used to explain the liquidity situation. The net foreign reserves are obtained from the difference between foreign assets and total foreign liabilities. The following equation (4.1)[12] tries to present the relationship between bank reserves and other accounts in the balance sheet.

$$\Delta(Deposits\ of\ Banking\ Sector) =$$

$$\Delta(\text{Open Market Operations}) - \Delta(\text{Currency Issued}) - \Delta(\text{Deposits of Public Sector }) + \Delta(Net\ Foreign\ Assets) + \Delta(Domestic\ Assets) - \Delta(Extra\ Budgetary\ Funds) + \Delta(Other\ Factors) \quad (4.1)$$

'Δ' indicates the daily change in the accounts of the analytical balance sheet. Equation (4.1) satisfies the expected relationship between bank reserves and other accounts. The CBRT's daily liquidity dataset[13] has been drawn up for the period of 2013-2018 based on equation (4.1).

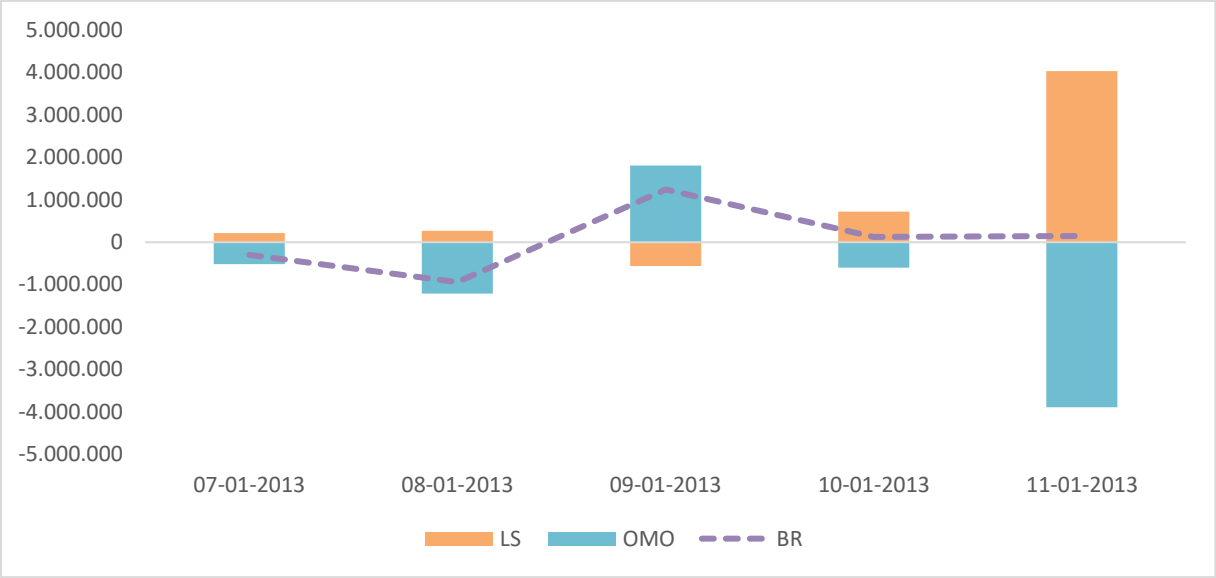
[12] The other factors are sum of the FX Revaluation Account and Deposits of Non-Bank Sector.
[13] It is available upon request from the author.



Source: Author's own calculation.

Graph 1. CBRT's Daily Liquidity Dataset (Liquidity Situation and Determinants of Liquidity Situation) (Daily Change) (Thousand TL) (07-01-2013 | 11-01-2013)

Graph 1 illustrates the liquidity situation and the determinants of the liquidity situation in the second week of January 2013. NFA represents 'Net Foreign Assets', DA represents 'Domestic Assets', CI represents 'Currency Issued', DPS represents 'Deposits of Public Sector', OF represents 'Other Factors', EBF represents 'Extra Budgetary Funds' and LS represents 'Liquidity Situation' in Graph 1. There is only one day (09.01.2013) which showed liquidity deficit, while on the other four days there occurred liquidity surplus. Liquidity deficit resulted from declining domestic assets. Liquidity surplus originated from diminishing government deposits both on 10.01.2013 and 11.01.2013. The decrease in the currency issued was main determinant of liquidity surplus both on 07.01.2013 and 08.01.2013.



Source: Author's own calculation.

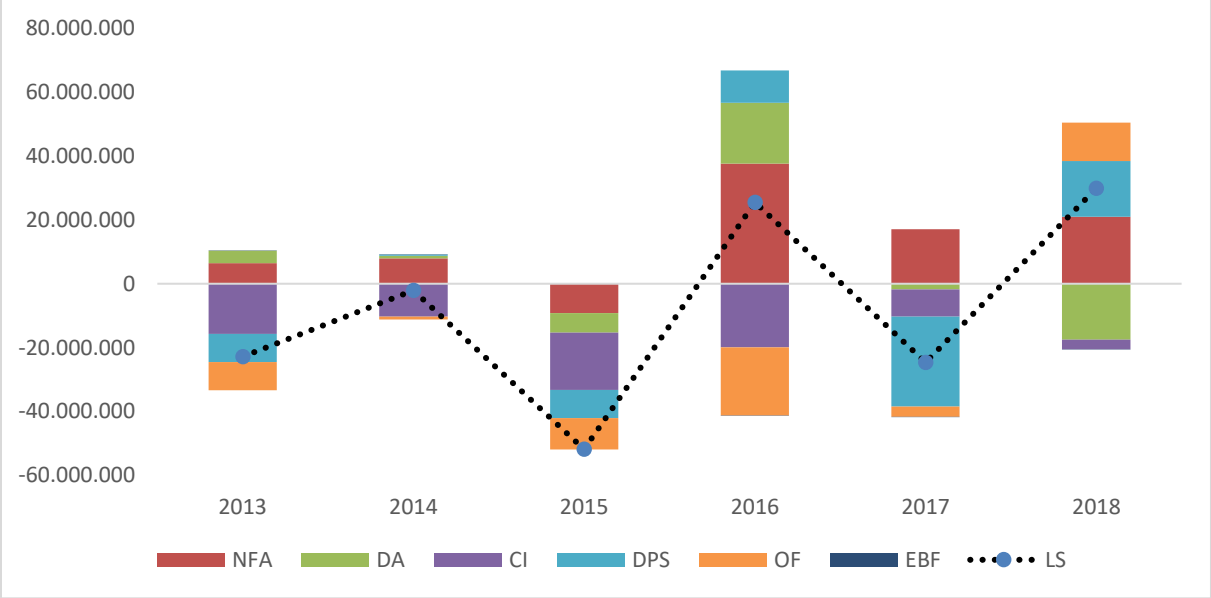
Graph 2. CBRT's Daily Liquidity Dataset (Liquidity Situation, Open Market Operations and Bank Reserves) (Daily Change) (Thousand TL) (07-01-2013 | 11-01-2013)

Graph 2 identifies the liquidity situation, the open market operations and the change in bank reserves in the same period. OMO represents 'Open Market Operations' and BR represents 'Deposits of Banking Sector' and LS represents 'Liquidity Situation' in Graph 2. All the open market operations which are realized in the mentioned period have a countercyclical character. Countercyclical character means that operations are realized in the reverse direction. For instance, if there is liquidity deficit (surplus), open market operations inject (extract) liquidity to (from) the market. Open market operations were realized in countercyclical mode for the liquidity deficit on 09.01.2013. The volume of operation was greater than the volume of liquidity deficit and this created the increment in bank reserves on 09.01.2013. Open market operations were also implemented in the countercyclical character for the liquidity surplus in the sample period. It is understood that the amount of open market operations was greater than the amount of liquidity surplus on the first and second day of the week and this led to the shrinkage in bank reserves. Nonetheless, the volume of open market

operations was smaller than the volume of liquidity surplus on the fourth and fifth day of the week and this resulted in a positive change in the bank reserves.

5.The General Assessment of the Liquidity Situation

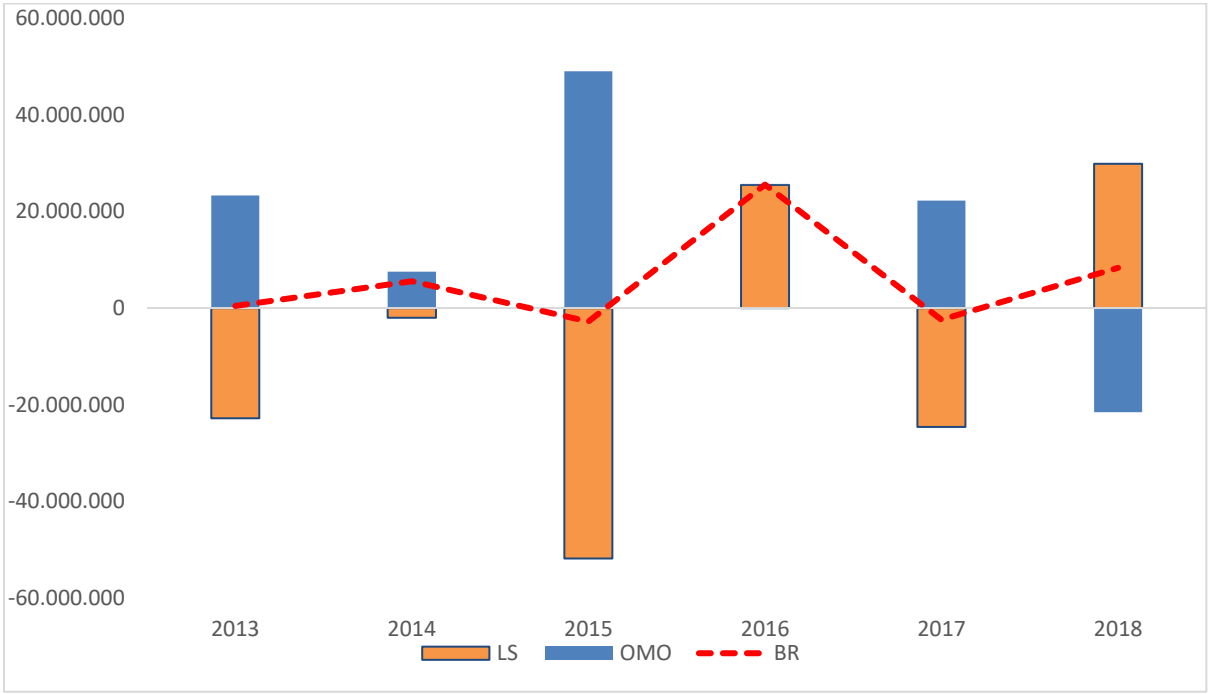
This section evaluates the liquidity situation, the open market operations and the bank reserves on a yearly basis in the period of 2013-2018. The CBRT has published "Monetary and Exchange Rate Policy Reports"[14] since 2002 and it presents the determinants of the liquidity situation under the heading of Turkish Lira Liquidity Management on a yearly basis. It is obvious that the CBRT has a more detailed dataset than this article does. Nonetheless, the CBRT's reports were published before the end of the year (1 month ago) and this causes deficient information about the liquidity situation.



Graph 3. CBRT's Daily Liquidity Dataset (Liquidity Situation and Determinants of Liquidity Situation) (Daily Change) (Thousand TL) (Yearly) (2013-2018)

[14]CBRT's Monetary and Exchange Rate Policy Reports, https://www.tcmb.gov.tr/wps/wcm/connect/EN/TCMB+EN/Main+Menu/Publications/Monetary+and+Exchange+Rate+Policy+Texts/Monetary+and+Exchange+Rate+Policy+Texts1/

Graph 3 exhibits the liquidity situation and determinants of the liquidity situation between 2013 and 2018. NFA represents 'Net Foreign Assets', DA represents 'Domestic Assets', CI represents 'Currency Issued', DPS represents 'Deposits of Public Sector', OF represents 'Other Factors', EBF represents 'Extra Budgetary Funds' and LS represents 'Liquidity Situation' in Graph 3. It can be observed that there was liquidity deficit in the years 2013, 2014, 2015 and 2017 and there was liquidity surplus in the years 2016 and 2018. The increase in currency issued and government sector deposits are main determinants of liquidity deficit. It is also determined that the decrease in other factors (OF) leads to liquidity deficit. When the years of liquidity surplus are investigated, it is understood that the increment in net foreign assets and domestic assets results in liquidity surplus.



Graph 4. CBRT's Daily Liquidity Dataset (Liquidity Situation, Open Market Operations and Bank Reserves) (Daily Change) (Thousand TL) (2013-2018)

Graph 4 shows the liquidity situation, the open market operations and the change in the bank reserves between 2013 and 2018. OMO represents 'Open Market Operations' and

BR represents ‘Deposits of Banking Sector’ and LS represents ‘Liquidity Situation’ in Graph 4. It can be noted that the open market operations had a countercyclical character in the years 2013, 2014, 2015, 2017 and 2018. Nonetheless, the open market operations had a procyclical character in 2016. The volume of countercyclical operations was greater than the volume of liquidity deficit in the years 2013 and 2014, and the amount of same operations was smaller than the amount of liquidity deficit in the years 2015 and 2017. It can be observed that CBRT interventions remain limited in the case of liquidity surplus and it seems that the CBRT did not choose to totally extract this liquidity surplus from the market. As an extreme case, the CBRT realized the impact of procyclical open market operations on the situation of the liquidity surplus in 2016.

Conclusion

This paper has tried to answer the questions of what the liquidity is and how the liquidity situation changes in the specific case of the Turkish economy. Liquidity is classified as a market liquidity in this article. Market liquidity is conceptualized by means of the EFT system and the market liquidity is observed from the statistics of the EFT. Nonetheless, the details of these transactions could not be obtained. However, CBRT’s analytical balance sheet has been used to analyze the liquidity situation which is originated from market liquidity. The CBRT’s daily liquidity dataset for the period of 2013-2018 has been created, and it is explained how the liquidity situation changes in the Turkish economy and which factors affect the liquidity situation in the perspective of an analytical balance sheet. It could be concluded that the increase in currency issued and government sector deposits are main determinants of liquidity deficit. Also, it is concluded that liquidity surplus results from the increment in net foreign assets and domestic assets. Significantly, this article has shown that the Central Bank

of Turkish Republic took a countercyclical position against both liquidity deficit and liquidity surplus between 2013 and 2018 (except for 2016).

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