TÜRKİYE CUMHURİYET MERKEZ BANKASI

Central Bank of the Republic of Turkey Foreign Exchange Reserve Management

2018

Contents

1. Preface

Foreign exchange (FX) reserves play a significant role in achieving macroeconomic policy targets and preventing possible financial crises in that they provide room for maneuver for the sustainability of the exchange rate regime and monetary policies.

Under the fixed exchange rate regime, central banks warranted that the local currency could be converted to foreign currency at a fixed rate, and they held foreign exchange reserves to fulfill this commitment. In the following periods, in line with the developments in the world economy, there was a shift from the fixed exchange rate regime to flexible and floating exchange rate regimes. Today, in view of the important role it also plays in achieving monetary policy independence, the free-floating exchange rate regime is widely used.

Despite the shift from the fixed exchange rate regime to the free-floating exchange rate regime, there has been neither a decrease in FX reserves of countries nor a change in their propensity to hold reserves. In particular, emerging countries have had a tendency to hold reserves in increased amounts to protect their economies against domestic and external shocks, easily repay their external debt, boost confidence in their countries across the international financial markets, and reduce borrowing costs through a fall in the sovereign risk premium by contributing to the improvement of external vulnerability indicators.

The growth in FX reserves has also induced an increase in the importance of effective FX reserve management. Poor or risky reserve management practices may expose the state and the institution responsible for the management of FX reserves to both financial risk and credibility risk. In this context, the importance of prudent reserve management policies, advanced and effective operational controls, and an effective risk management system becomes evident.

In the light of these facts and in the framework of economic policies in place, the Central Bank of the Republic of Turkey (CBRT) consistently improves its management of growing FX reserves and related risks in line with closely monitored developments, with a view to strengthening FX reserves.

As per the CBRT's transparency and accountability principles, this study summarizes the basic principles affecting the Bank's FX reserve management policies and the operational and technical requirements that are a prerequisite for prudent FX reserve management practices.

2. Definition of Foreign Exchange Reserve

Foreign exchange reserves of a country are external assets that are readily available to and controlled by monetary authorities for use in case of external payment difficulties. FX reserves are used not only as a source of direct financing but also as a means of market intervention by affecting the exchange rate in the context of indirect regulation and supervision of potential adverse conditions caused by external payment difficulties (CBRT Balance of Payments Report, 2012-IV).

The CBRT balance sheet includes Foreign Currency Banknotes FX, Foreign Banks FX and Reserve Tranche Position items, which altogether make up the "Central Bank Gross FX Reserves". On the other hand, gold holdings are not included in the gross FX reserves definition. FX reserves in this study refer to gross FX reserves data.[1] As a kind of strategic asset, gold reserves are managed under a separate regulation according to criteria that differ from FX reserves. The coverage of this study is limited to FX reserve management. Summary information about gold reserve management is presented in the annex (Annex 1).

[1] Data on the Central Bank's gross FX reserves used in this study are accessible at http://evds.tcmb.gov.tr/.

A large portion of FX reserves is composed of assets that can be readily liquidated when needed. To determine the available FX reserve amount, the "SDR Holdings" account under the Reserve Tranche Position and Foreign Banks FX is deducted from the gross FX reserves figure. In this context, almost the whole of FX reserves is available reserves.

3. Legal Framework

The CBRT Law No. 1211 (the Law)[2] constitutes the legal basis for reserve management practices at the CBRT.

According to Article 4, paragraph I, subparagraph (e) of the Law, one of the fundamental duties of the CBRT is "to manage gold and foreign exchange reserves of the country". In addition, Article 53, subparagraph (b) of the Law stipulates that "the Bank shall manage gold and foreign exchange reserves of the country consistent with the monetary policy targets and practices. The Bank may, with this objective, perform all kinds of banking activities in the domestic and international markets including spot or forward purchase and sale of gold, foreign exchange, securities and derivatives products, as well as lending and borrowing operations, in compliance with the procedures and principles that it shall determine by taking into consideration the safety of investments, liquidity and return priorities, in that order".

FX and gold reserve management regulations that the Bank's Board has drawn up and decisions that it has taken in line with the duties and powers entrusted to it by the Law form the other legal bases for reserve management.

On the other hand, pursuant to Article 4, paragraph III, subparagraph (a) of the Law, "the Bank shall be the financial and economic advisor, the fiscal agent and the treasurer of the Government...". In the framework of this subparagraph, FX debt service performed on behalf of the Treasury is among the main factors determining the CBRT's reserve management policies.

4. Institutional Framework

Duties, powers and responsibilities of the reserve management entities at the CBRT have been defined within the legal framework cited above. Accordingly, duties and powers have been separated according to commonly accepted risk management principles; duties and powers of reserve management entities have been clearly defined to achieve coordination among units and enable employees to work efficiently and promptly within their area of responsibility.

The institutional framework of reserve management can be analyzed under a three-layered hierarchical structure. As the highest decision-making body of the CBRT, the Board makes the main decisions concerning the reserve management policies and practices. Within this capacity, the Board has approved the "Guidelines for Foreign Exchange Reserve Management (the Guidelines)" drafted in line with the priorities cited in Article 53 of the Law, set the overall investment criteria for reserve management, and authorized the Executive Committee and the CBRT Governor to make decisions regarding the implementation. The Guidelines assign the Foreign Exchange Risk Management and Investment Committee (FXRMIC) with the task to generate proposals for the implementation-related matters to be decided on by the Executive Committee and the CBRT Governor. Under the presidency of a Deputy Governor assigned by the CBRT Governor, the FXRMIC is composed of the executives of the Markets Department responsible for the execution of reserve management operations, and the Corporate Risk Management Department.

Decisions made by the Executive Committee and the CBRT Governor in the framework of the power that the Board has entrusted constitute the second layer of the corporate decision-making process. At this layer, the benchmark portfolio and the investment strategy taken as a reference in reserve

[2] Central Bank of the Republic of Turkey Law No. 1211 as amended by Law No. 4651 dated 25 April 2001

management are approved by the Executive Committee every year upon the proposal of the FXRMIC. The benchmark portfolio reflects the investment strategy and risk policy in the respective year along with the corporate objectives and criteria specified in the Guidelines.

The last layer of the corporate decision-making process involves the implementation of reserve management practices in line with the criteria set out in the Guidelines and the benchmark portfolio. Reserve management practices are implemented within an organizational structure established based on the separation of duties principle. Accordingly, the Markets Department performs its FX reserve management operations in compliance with procedures and principles specified in the Guidelines, based on the investment strategy, risk policies, and the benchmark portfolio set by the Executive Committee as well as on market developments. On the other hand, the Corporate Risk Management Department is tasked with defining, measuring, and reporting reserve management risks and with making risk-based performance evaluations in line with the procedures and principles set out in the Guidelines. Moreover, the front office performing the reserve management operations and the back office responsible for the settlements, correspondence, follow-up and reporting concerning these operations have been separated. The back office procedures are carried out by the Market Operations Division.

This multi-layered decision-making process and the organization based on the separation of duties principle are intended to ensure that the risks in the reserve management process remain within reasonable limits of corporate risk tolerance.

In addition, the CBRT has an Audit Department directly accountable to the Governor which is tasked with auditing all transactions, activities, and related processes of the Bank's departments, branches, and representative offices. Consequently, reserve management activities of the CBRT are also regularly audited by the Audit Department.

Effective oversight of reserve management operations and related risks is performed via advanced information systems and regular reports.

The recruitment of the personnel responsible for reserve and risk management operations is based on the employment of well-educated persons with certain qualifications, and special importance is attached to on-the-job training. Besides in-house training programs, the staff also attend seminars held by other central banks and major international banks and institutions.

5. Transparency and Accountability

In line with its principle of transparency, the CBRT has increased public disclosure of its reserve management operations as it has done for its other activities. The Bank provides weekly data on FX assets through weekly balance sheets it posts on its website.

Moreover, 75 countries including Turkey and advanced countries such as the US, the UK and EU countries[3] release monthly data on FX and gold reserves[4] through the IMF's Special Data Dissemination Standards (SDDS) Reserve Data Template.

To ensure reserve management accountability, accounting records are kept according to internationally accepted accounting standards. As is the case in central banks within the ECB's European system of central banks and in many other central banks of countries such as the US, UK, Canada, Argentine, and Mexico, records kept according to international accounting standards are regularly audited on an annual basis by an independent audit company liable to international audit standards. As

[3] In addition to EU countries, the European Central Bank (ECB) also publicly discloses information on FX and gold reserves through the same template. The IMF's Special Data Dissemination Standards Reserve Data Template is accessible on its website at http://dsbb.imf.org/Pages/SDDS/CountryList.aspx.

[4] International reserves and foreign currency liquidity table (in both Turkish and English) published by the CBRT in the scope of the Special Data Dissemination Standards [SDDS] Reserve Data Template is available on the CBRT website at http://www.tcmb.gov.tr/wps/wcm/connect/EN/TCMB+EN/Main+Menu/Statistics/Balance+of+Payments+and+Related+Statistics/International+Reserves-Foreign+Currency+Liquidity/.

mentioned above, the CBRT's Audit Department also regularly audits the reserve and risk management operations to check whether they are adequate and consistent with the framework defined by the Board and whether they function systematically.

6. Foreign Exchange Reserve Management Objectives and Strategy

The first priority of the CBRT is to establish the financial conditions required for price stability. In this framework, the exchange rate regime, monetary and exchange rate policies, and the duty that the CBRT undertakes regarding the repayment of Turkey's FX-denominated domestic and external debt play an important role in defining the priorities and objectives of reserve management. Reserve management priorities are clearly listed in Article 53 of the Law as “safety of investments, liquidity, and return" respectively. In other words, priorities in this order refer to achieving a reasonable amount of return under the condition that the capital is preserved and the required amount of liquidity is maintained.

Main factors determining the reserve management strategy are summarized as the current monetary and exchange rate policy, the CBRT's liability structure, the Treasury's borrowing strategy, FX debt payments executed on behalf of the Treasury, and developments in domestic and external economies.

A close look at the history of exchange rate regimes in Turkey reveals that before 1980, Turkey had a fixed exchange rate regime with strict foreign exchange controls and reserves were used mainly for short-term needs. With the liberalization policies of the early 1980s where foreign exchange controls were largely eliminated, banks as well as other institutions and individuals were allowed to hold foreign exchange. Due to these changes, a significant amount of FX reserves was accumulated, and this contributed to providing a level of confidence to domestic and international financial markets through the markets established under the lead of the CBRT.

The fixed exchange rate regime consistent with the inflation target that was implemented in Turkey before 2001 required FX reserves to be invested in liquid assets and accordingly, providing liquidity became the key factor in the design and implementation of reserve management strategies. Under the floating exchange rate regime in place since February 2001, the CBRT has now and then intervened in FX markets only to prevent excessive volatility and held daily FX purchase auctions to accumulate reserves parallel to the increase in FX liquidity. The decrease in the frequency and amount of interventions due to the current floating exchange regime provides the CBRT with more flexibility in defining its reserve management and investment strategy in terms of maturity and liquidity. The CBRT continues to closely monitor FX supply and demand developments and take necessary measures to ensure the smooth functioning of the FX market and shore up FX liquidity. In case of unhealthy price formation and excessive volatility in exchange rates fueled by speculative behaviors stemming from loss of market depth, the Bank intervenes in the market directly or through flexible auctions.

Another factor that influences the design of reserve management strategies is the FX deposits at the CBRT as they constitute a source of reserves. Unlike other central banks, workers' remittances have a historically significant share in FX deposits at the CBRT. Workers' remittances refer to FX deposit accounts opened at the CBRT by non-resident real persons of Turkish nationality with residence or work permit abroad. With a view to attracting the savings of Turkish citizens working abroad to help Turkey overcome foreign exchange bottlenecks in the late 1970s, these citizens were offered the facility to open FX deposit accounts with letters of credit (1976) and super FX accounts (1994) at the CBRT.[5] Non-resident Turkish citizens who wanted to contribute to the Turkish economy were highly interested in this facility due to

[5] The expression *workers' remittances* will be used in this text to cover FX deposit accounts with letters of credit and super FX accounts from now on.

the favorable interest yields, trustworthiness of the CBRT, and facilitated deposit and withdrawal transactions. These accounts significantly contributed to meeting the FX requirement in times of need.

However, the importance of these accounts in reserve accumulation and design of the investment strategy started weakening with the adoption of the floating exchange rate regime in 2001 that offers more flexibility in terms of the maturity and liquidity of FX reserves. Consequently, the balances of these accounts sharply declined as their interest rates were gradually cut after 2004. In its press release on 8 October 2013, the Bank announced that it would gradually cease the workers' remittances facility starting from 2014.

Another significant component of CBRT's liabilities is the accounts held at the CBRT as required reserves for the FX deposit accounts opened with banks operating in Turkey. In addition to these FX required reserve accounts, the Reserve Options Mechanism (ROM) also allows a certain portion of Turkish lira required reserves to be maintained in foreign currency or standard gold. The ROM facility adopted to support financial stability after the global crisis has markedly expanded the share of required reserve account balances in CBRT's FX reserves.

The balance of Treasury's FX account at the CBRT opened for FX debt payments to be executed on behalf of the Turkish Treasury and the external cash outflows that arise from these payments constitute the other factors affecting the design of reserve management strategies. In this respect, external debt management strategies are considered an influential factor in reserve management.

It is occasionally argued that it would be more beneficial for the Turkish economy if the CBRT preferred extending loans to Turkish banks or reducing the Treasury's external borrowing cost by purchasing the Eurobonds issued by the Treasury over using its FX reserves merely in international markets and in this way, it would help in curbing the Treasury's borrowing costs. However, making FX reserves a subject of domestic investment or using them to buy Eurobonds from the Treasury would mean a direct loan provision by the CBRT to the domestic market or the Treasury. In other words, such investment transactions would be deemed domestic loans. Since loans extended or bonds purchased in Turkey are completely characterized as domestic loans, they would be displayed in the CBRT balance sheet as a domestic asset item, not an external asset item, and would not be included in FX reserves. Therefore, it would not be possible to sell such investment instruments on the international markets and create a source of foreign currency in the face of a likely shock to Turkey. Accordingly, FX lending in the domestic market would actually reduce the CBRT's FX reserves and such loans and debts would not be categorized as international reserves.

In addition, Article 104 of the Maastricht Treaty prohibits national central banks from offering overdraft and credit facilities to the treasuries and public institutions and bodies as well as from purchasing and investing in the debt instruments issued by these institutions. This prohibition is also cited in Article 56 of the CBRT Law No. 1211, which sets forth that the Bank shall not grant advance and extend credit to the Treasury and to public establishments and institutions, and shall not purchase debt instruments issued by the Treasury and public establishments and institutions in the primary market. Therefore, the CBRT does not invest its FX reserves in FX debt instruments that the Treasury issues to reduce external borrowing costs.

7. Types of Foreign Exchange Reserve Management Operations

The Law broadly explains the types of transactions related to reserve management. Accordingly, the Bank can carry out all kinds of banking activities at home and in international markets covering spot or forward purchase and sale of gold, foreign exchange, securities and derivatives transactions, lending and borrowing activities.

The Guidelines, which were approved by the Board using its authority given by the Central Bank Law, determines the principles and procedures for the management of foreign exchange reserves, defines the transactions that may be carried out, and investment instruments that may be used, and sets out the principles and constraints for transactions with investment purposes.

The Guidelines stipulate that the banking transactions that can be carried out in the scope of reserve management are:

- Purchase/Sale of FX,
- FX Deposit Transactions,
- Purchase/Sale of Securities,
- Repurchase and reverse repurchase transactions,
- Security lending transactions,
- “Forward” Purchase/Sale of FX,
- Other derivatives transactions.

8. Implementation of Foreign Exchange Reserve Management

Reserve management is executed within the pre-specified limits based on the benchmark portfolio and investment strategies designed so as to minimize the credit, market and liquidity risks that may be encountered in international markets. The principles for determining the benchmark portfolios are explained in detail in the risk management section.

9. Risk Management

9.1. Sources of Risk

Reserve management strategies, financial markets that the Central Bank is engaged in and the investment instruments used are the factors determining the types of risks that the Central Bank is exposed to in reserve management. An analysis of reserve management activities of the CBRT in this respect reveals that the main financial risks that the CBRT is exposed to are market risk, credit risk and liquidity risk. The CBRT is also exposed to various operational risks stemming from its reserve management activities.

9.1.1. Market Risk

The likelihood of a decline in the market value of reserve assets or appreciation of FX liabilities because of a fluctuation in exchange rates, interest rates or prices in international markets creates market risk. While fluctuations in exchange rates in international FX markets lead to currency risk, fluctuations in interest rates in the markets on which the CBRT conducts operations during reserve management lead to interest rate risk. The change in gold prices in international markets affects the value of gold reserves, creating market risk.

9.1.2. Credit Risk

Due to the nature of the financial markets, the CBRT is subject to credit risk in FX and securities markets like all institutions due to the default likelihood of its counterparts in fulfilling their obligations. The risk that the CBRT faces in deposit transactions is the direct credit risk. Although the institutions that the CBRT conducts operations with have higher credit worthiness than international standards and the transactions have short maturities, the CBRT does not ignore the probability of such a risk and takes all measures necessary to control credit risk.

The FX selling and buying transactions that the CBRT conducts with banks with high credit scores in international markets bear settlement risk. Another type of risk is the replacement risk that may arise from security trading in international securities markets. As these operations are based on the "delivery versus payment" principle, the CBRT is not subject to any settlement risk. Nevertheless, in case the counterparty institution defaults in fulfilling its contractual obligations and if the operation is re-conducted with another institution, the market conditions may be worse. This replacement risk is sometimes considered as a risk type that can be ignored as the likely loss that will arise in case this risk realizes is significantly lower compared to other types of credit risks, but still the CBRT evaluates it together with other credit risks and takes all necessary measures to minimize it.

9.1.3. Liquidity Risk

In most of the emerging market economies, it is hard to predict the timing and size of FX inflows and outflows, and Turkey is no exception. For this reason, another important type of risk that requires management is the liquidity risk. This risk also implies the possibility of loss while meeting unpredicted sudden FX liquidity needs.

9.1.4. Operational Risk

Operational risk management has become a more important area of risk management due to adverse events such as the September 11th attacks. Operational risk is defined as the direct or indirect loss risk emanating from inadequate or unsuccessful business processes, staff and systems, or from external factors. As operational risk is a broad type of risk covering all operations of the CBRT, ineffective management of this risk may adversely affect management of other risks as well.

9.2. Risk Control

The control of risks that the CBRT is exposed to during reserve management starts at the strategical asset allocation stage where the benchmark portfolio and investment strategies are set. The benchmark portfolio sets forth the risk management strategy and the investment strategy of the respective year drawn up by taking into account the institutional objectives and limitations specified in the Guidelines. Once the currencies, instruments and countries to be invested in are specified, the expected return and risks involved in reserve management will have been mostly determined. Therefore, the decisions made at this stage shall be in compliance with safety of investments, liquidity and return priorities defined in Article 53 of the Law as well as the CBRT risk tolerance associated with the investment criteria stipulated in the Guidelines. In other words, the objective of strategic asset allocation is to obtain reasonable amount of return provided that capital preservation and adequate liquidity is maintained and utmost importance is attached to the prudent management of reserves, hence the national wealth of the country.

Accordingly, the Guidelines determine the principles and procedures for investment-oriented operations and introduce limitations pertaining to currencies that may be invested in, credit rating limits for countries, institutions that the CBRT can conduct operations with, security types and maturities.

Most of the benchmark portfolio, which is designed in accordance with the limitations stipulated in the Guidelines, is composed of the portfolio managed on the asset-liability matching principle. This portfolio is part of the benchmark portfolio set to reflect the CBRT's risk tolerance over an investment horizon of one year taking into account the FX liability items on the CBRT's balance sheet, predictable off-balance sheet FX cash flows and economic developments within the country and in international markets.

The CBRT's FX liabilities are composed of banks' FX deposits, and other domestic and external liability items on the CBRT's balance sheet. Nevertheless, the CBRT has a significant amount of FX flows due to FX interventions that it carries out in the form of buying or selling FX in domestic markets, debt payments that it carries out in foreign currency in the name of the Treasury and the Treasury's FX borrowing. These off-balance sheet flows are also calculated with liability items while managing assets and liabilities. The currency break-down of the portfolio, which is managed according to the asset-liability matching principle, is determined according to the CBRT's FX liabilities and the currency distribution of the expected cash flows of the CBRT; while the maturity distribution of the portfolio is determined in accordance with the maturities of these liabilities and flows with an aim to minimize exchange rate and interest rate risks. Certain limits have been specified for deviations from the currency composition target as well as from the maturity target to prevent the market risk from exceeding admissible levels.

The rest of the benchmark portfolio is composed of other portfolios set in different currencies in the framework of risk and investment strategies drawn up for that year.

Similarly, credit risk control also starts at the benchmark portfolio design stage. The Sum of Maximum Transaction Limits specified in the benchmark portfolio limits the part of reserves that may be exposed to credit risk. In reserve management, the sum of credit risk limits, which are allocated to borrowers and institutions with which the transactions will be made, shall not exceed this global limit. The second phase of credit risk control is the minimum credit rating criteria sought in choosing eligible institutions. The transaction limits for the institutions meeting this condition are allocated according to their capital size and the results of an in-house rating model that considers such variables as the credit ratings assigned by international credit rating institutions, selected balance sheet items and their likelihood of obtaining support in case of a default. The utilization of transaction limits is monitored real-time by software developed at the Bank.

While designating the investment universe for the benchmark portfolio, the selected investment instruments should be liquid. Some additional measures have been taken to increase the effectiveness of liquidity management taking into account the fact that liquidity itself bears a significant cost and this cost has been increasing in tandem with the rise in reserves. The reserve assets in key currencies making up the FX reserves have been divided into tranches so as to make sure that liquidity can be provided in different maturities. While operational portfolios meet daily liquidity needs, liquid portfolios are kept to serve short-term liquidity needs. Meanwhile, investment portfolios are managed to contribute to return from reserves in the long term provided that they remain within global risk limits, and the aim is to decrease liquidity cost.

Necessary measures are taken to minimize the operational risk as this type of risk can make an overall impact on the entire reserves and the risk management process. Accordingly, the management of the operational risk pertaining to reserve management is based on the self-assessment method. In this method, while carrying out reserve management activities, risk assessment is made for each of the processes and the effectiveness of the existing controls are evaluated for each process. Action plans are established to address the risks detected during evaluations and the plans are put into practice after they are approved by the senior management. In the framework of the operational risk control and risk monitoring, the risk indicators identified for each process are closely monitored to ensure the effectiveness of the method employed.

As another measure to avoid operational risk, the "Emergency Management Center" has been established that can become operational in a very short time in case the current infrastructure used in reserve management is out of operation for any reason. This Center allows uninterrupted reserve management in tandem with the Bank's activities in case of an emergency.

9.3. Risk Measurement, Reporting and Monitoring

Once the overall level of risk that is within the limits of the CBRT's risk tolerance is identified through the benchmark portfolio, current risk exposure is measured, reported and monitored on a regular basis. In order to monitor the currency risk, the CBRT regularly monitors and reports whether the deviations in the currency composition of reserves from the target currency composition remain within pre-determined limits, set within the benchmark portfolio. In order to monitor the interest rate risk, the CBRT regularly compares the current duration of reserve portfolios with the duration target set at global and sub-portfolio levels, and checks and reports whether the deviations seen are within pre-determined limits.

The risk exposure of portfolios to price swings in the market is measured by using methods such as duration and DV01, which indicate how yield volatility and market price changes affect the value of portfolios. The market risk is measured based on global and sub-portfolio levels for reserve portfolios and benchmark portfolios.

The monitoring and reporting of the credit risk is done by the "Real Time Limit Monitoring Program" which is developed in-house. This system serves as a warning mechanism, advising the respective authority in the pre-transaction phase of whether the entity with which the transactions is to be made has sufficient limit, and once the transaction is made, deducts the credit risk exposure amount from the limit of the related entity throughout the exposure period. In calculation of the credit risk exposure, it is ensured that the amounts reflected on limits are proportional to the magnitude of the credit risk by taking into account whether the transaction directly poses a credit risk, settlement risk or a replacement risk. The program projects the real-time limit usage on the database and produces reports based on the counterparty, group, credit rating and country.

9.4. Performance Evaluation

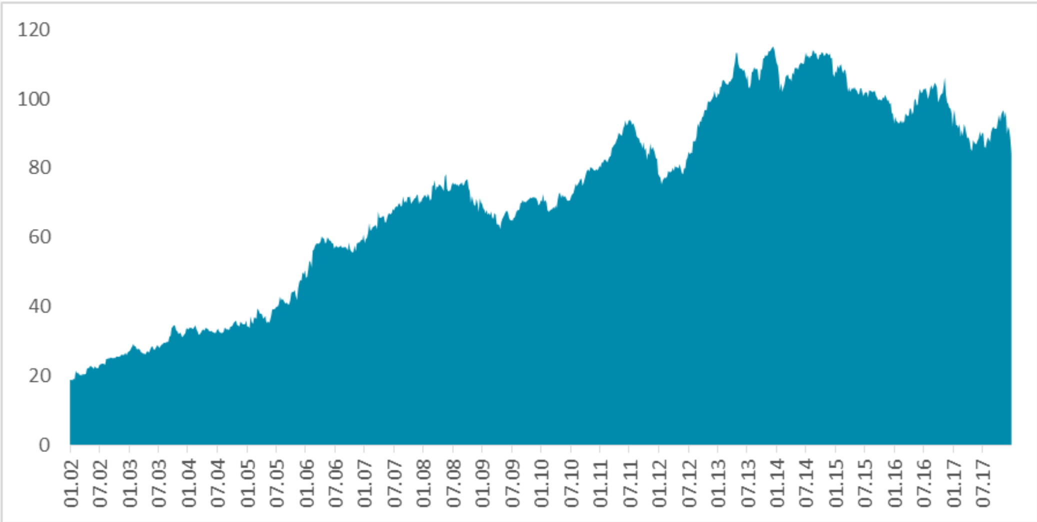
The success of reserve management is evaluated by comparing the returns obtained from reserve portfolios with those obtained from benchmark portfolios determined for each period. However, during this comparison, a risk-based performance evaluation is made by considering the risks generated in the course of obtaining the relevant returns.

10. Reserve Management Operations in 2017

10.1. Reserve Developments in 2017

FX reserves of the CBRT increased substantially in the period from January 2002 to December 2017 mainly driven by FX sales/purchases, export rediscount credits and the reserve requirement practice. In 2017 though, they declined slightly on the back of net effect of foreign debt payments on behalf of the Treasury, FX sales to energy importing state-owned enterprises, and inflows arising from export rediscount credits (Chart 1).

Chart 1: CBRT's Gross FX Reserves (Billion USD)



Source: CBRT Last Observation: 31 December 2017

10.2. Investment and Risk Management Process

The CBRT's FX reserves are managed in line with the principles set out in the Guidelines for Foreign Exchange Reserve Management based on the benchmark portfolio, determined annually, which is reflective of the Bank's overall risk tolerance and investment strategy. The benchmark portfolio, indicative of the CBRT's preferences on strategic asset allocation, takes effect at each year-end to be implemented in the following year with the approval of the Executive Committee on the recommendation of the FXRMIC.

The identification and control of risks inherent in the reserve management process starts with the strategic asset allocation, in other words, while setting the benchmark portfolio. Once the currencies and instruments to be used in reserve management and the duration target for the investments are set, the expected return and financial risks involved in reserve management are also determined to a great extent. Reflecting the CBRT's preferences regarding strategic asset allocation, the benchmark portfolio consists of the target currency composition, duration targets and related deviation limits from these targets, the number and ratios of sub-portfolios to be formed in major currencies, overall credit risk limits and the investment universe representing eligible transaction types, countries and instruments to invest in. The aim in determining the benchmark portfolio is to ensure that an adequate return is obtained while observing capital preservation and liquidity constraints to devote the utmost importance to the prudent management of foreign exchange reserves, hence the national wealth of the country.

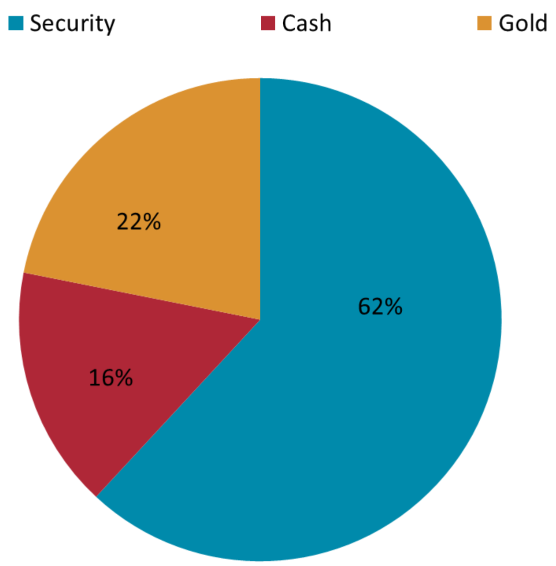
Based on the objectives and limits set by the Guidelines and the benchmark portfolio, reserve management operations are conducted in international markets through purchases and sales of foreign exchange, forward transactions, other derivative instruments, time deposit transactions, purchase and sale of securities, repurchase and reverse repurchase transactions and securities lending transactions.

10.3. Investing Activities in 2017 and Composition of Reserves

Amid positive developments related to global growth in 2017 overall, reverberations of the recent crises seen in international markets have eased, albeit to a limited extent. Accordingly, some advanced economies have embarked on monetary tightening measures. Nevertheless, other advanced economies maintained an expansionary monetary policy. In this scope, the on-going conservative approach in reserve management prevailed also in 2017, in which financial risks continued to hover at high levels.

Against this background, in 2017 FX reserves were mainly utilized by investing in securities issued or directly guaranteed by developed country treasuries as well as in those issued by supranational agencies. As of 31 December 2017, the CBRT's reserves were composed of securities investments (62%), cash and deposits at commercial banks and central banks abroad (16%), and gold assets (22%) (Chart 2).

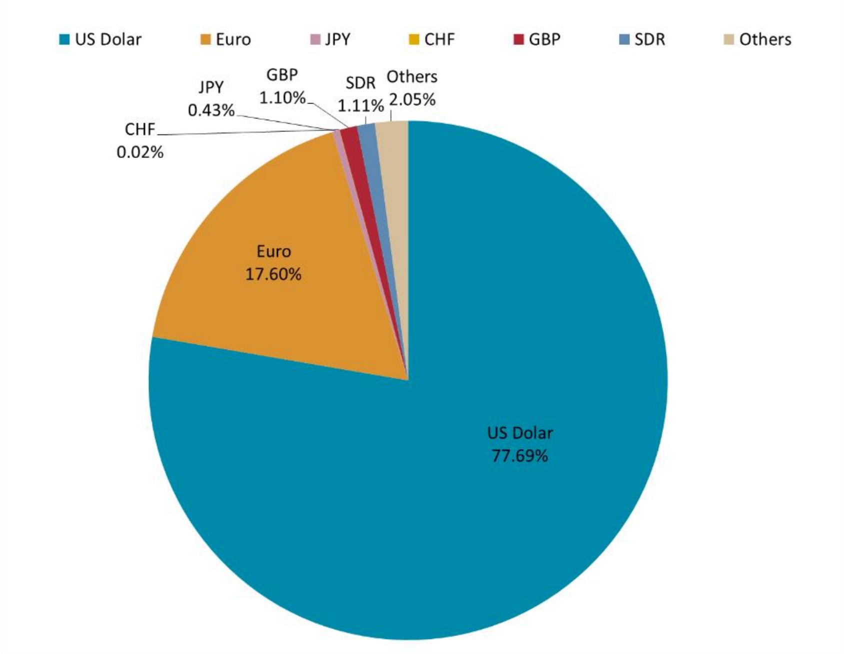
Chart 2: CBRT's FX Reserve Composition



Source: International Reserves and FX Liquidity (CBRT)   Last Observation: 31 December 2017

The breakdown of total FX assets on the CBRT's balance sheet by currency unit as of 31 December 2017 reveals that these assets consist of USD at 77.7 percent, Euro at 17.6 percent and other currencies at 4.7 percent (Chart 3).

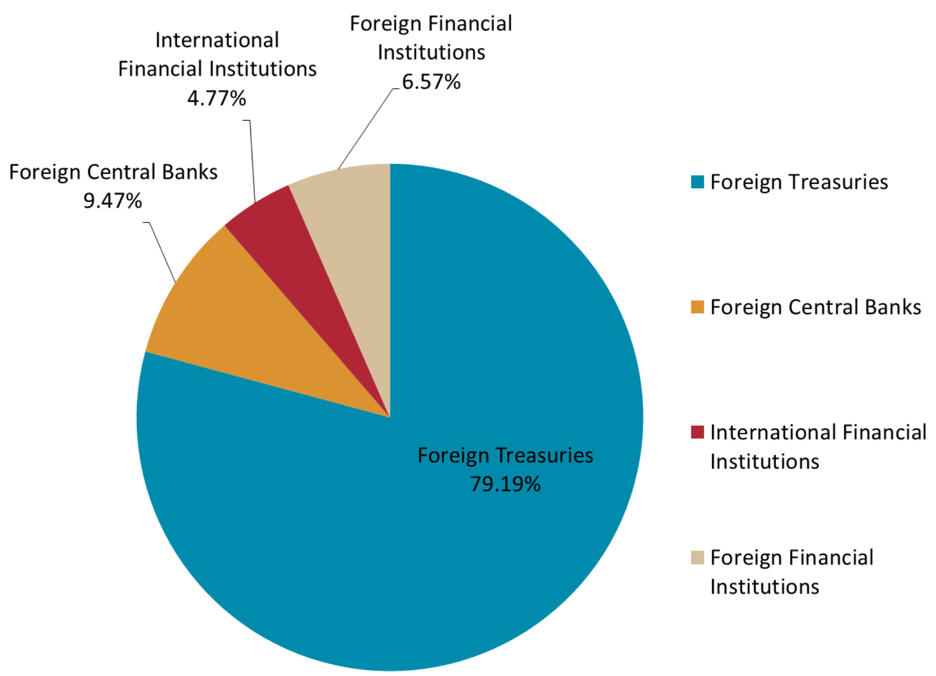
Chart 3: Breakdown of Total FX Assets by Currency



Source: CBRT 2017 Independent Audit Report   Last Observation: 31 December 2017

The breakdown of assets included in FX reserves by sectors as of 31 December 2017 indicates that 79 percent is composed of sovereign bonds, whereas the shares of international financial corporations, financial corporations abroad and investments in foreign central banks stood at 4.8 percent, 6.6 percent and 9.5 percent, respectively (Chart 4).

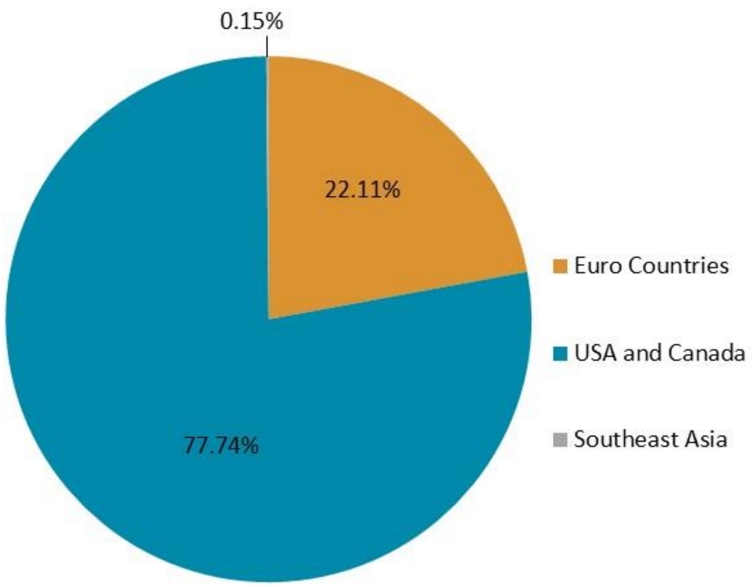
Chart 4: Breakdown of FX Reserve Assets by Sectors



Source: CBRT 2017 Independent Audit Report   Last Observation: 31 December 2017

Meanwhile, in terms of the breakdown of securities portfolio by country groups, it is noteworthy that the US and Canada, having the largest shares, are followed by European countries (Chart 5).

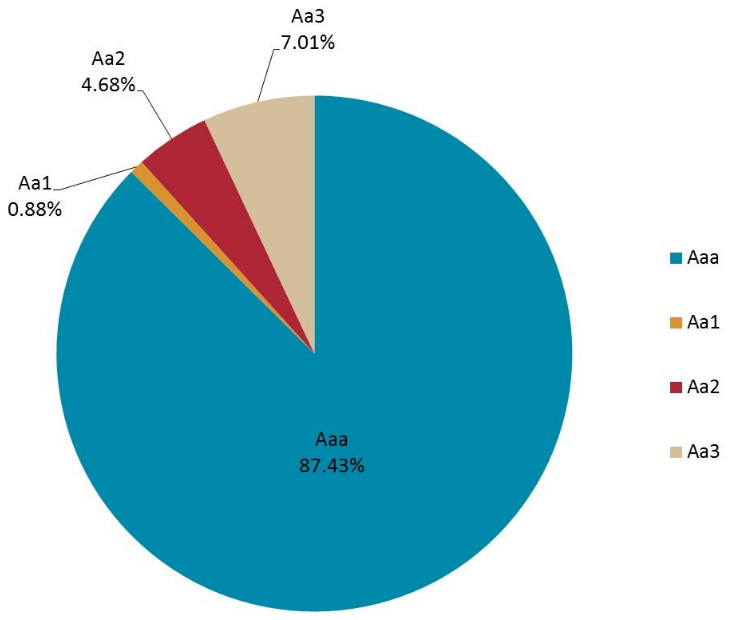
Chart 5: Breakdown of Securities Portfolio by Country Groups



Source: CBRT 2017 Independent Audit Report Last Observation: 31 December 2017

The majority of the sovereign bonds had an Aaa credit rating by 31 December 2017 (Chart 6). Whereas, the deposits at commercial banks abroad had a credit rating of Aa3 by the same date.

Chart 6: Breakdown of Sovereign Bonds by Credit Ratings



Source: CBRT 2017 Independent Audit Report   Last Observation: 31 December 2017

11. Overview

In sum, FX reserves posted a limited decline in 2017 due to the net effects of outflows driven by foreign debt payments on behalf of the Undersecretariat of Treasury and by FX sales to energy exporting state-owned enterprises, and inflows arising from export rediscount credits. The year 2017 was marked by continued effects of the crises that broke out in international markets in recent years, hence requiring maintenance of a conservative investment strategy. The same approach prevails also in 2018, a year shaped by advanced economy monetary policies and global growth developments.

Annex 1. Management of Gold Reserves

The Central Bank's gold reserves of international standards are managed within the framework of the guidelines set out by the Board, pursuant to the provisions and conditions of the Law No.1211. According to these guidelines, the investment strategy for gold reserves is put into effect each year upon the approval of the Executive Committee, based on the Bank's risk tolerance, international market conditions and developments in the country's economy and at international markets.

Within the scope of the Central Bank's gold reserve management, transactions such as direct purchases and sales, allocated gold custody account, allocated and unallocated term gold deposit transactions, FX swaps against gold and gold swaps against FX, location swaps and physical transportation of gold can be executed.

The bulk of the manageable gold reserves is maintained domestically at the Central Bank Head Office and at Borsa İstanbul, whereas a portion is kept readily available for extraordinary circumstances and marketable at banks abroad, the risks of which are accepted by the Central Bank. It is also possible to relocate gold reserves among the existing depositories by way of location swaps and physical transportation or move them to a new depository.

To conclude, the Central Bank gold reserves of international standards are managed pursuant to the reserve management policy and international banking practices.

In the period following the 2008 global crisis, the securities yields fell to their historic lows, even to negative territory, raising further the importance of diversification in reserve management. As a result, gold, thanks to its low correlation to other asset categories, started to come to the fore in terms of reserve diversification. In fact, some central banks reversed their tendencies to sell gold while others increased their gold purchases in the period following the 2008 global crisis.

In Turkey, although the CBRT reserves soared after 2001, the volume of net gold reserves excluding required reserves remained unchanged. In this framework, given the low share of required reserves-excluded net gold reserves in total reserves, the CBRT purchased standard gold on a limited scale in 2017 in order to diversify its reserve investments.

Meanwhile, led by the reduced willingness to take risks in the aftermath of the financial crisis, public questioning was sparked in some countries regarding maintenance of gold assets -kept for strategic purposes- at various central banks and other custodian banks abroad instead of holding domestically in their own vaults, and some central banks decided to hold their gold assets in domestic vaults.

Considering that the increase in the volume of gold reserves held at Borsa İstanbul will contribute to the development and further deepening of the Turkish gold market, as well as to the diversification of products based on gold, a portion of the CBRT's gold assets held at central banks abroad was transferred to the vaults at Borsa İstanbul Precious Metals Market in 2017.