



TURKEY

FINANCIAL SECTOR ASSESSMENT PROGRAM

DETAILED ASSESSMENT OF OBSERVANCE— ASSESSMENT OF OBSERVANCE OF THE CPMI-IOSCO PRINCIPLES FOR FINANCIAL MARKET INFRASTRUCTURES

February 2017

This Detailed Assessment of Observance of the CPMI-IOSCO Principles for Financial Market Infrastructures on Turkey was prepared by the staff of the World Bank in the context of a mission overseen by Fund and Bank staff. It is based on the information as of April 2016.

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FINANCIAL SECTOR ASSESSMENT PROGRAM
REPUBLIC OF TURKEY

ASSESSMENT OF OBSERVANCE OF THE CPMI-IOSCO
PRINCIPLES FOR FINANCIAL MARKET INFRASTRUCTURES

**DETAILED ASSESSMENT OF
OBSERVANCE**

NOVEMBER 2016

This report was prepared in the context of a standards assessment mission in Turkey during April 2016, overseen by the Finance & Markets Global Practice, World Bank, and the Monetary and Capital Markets Department, IMF.



THE WORLD BANK
FINANCE & MARKETS GLOBAL PRACTICE

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GLOSSARY

ALCTT	Asset Leasing Company of the Turkish Treasury
BAT	Banks Association of Turkey
BIS	Bank for International Settlements
BIST	Borsa Istanbul
BRSA	Banking Regulation and Supervision Authority
CBRT	Central Bank of the Republic of Turkey
CCP	Central Counterparty
CPMI	Committee on Payments and Market Infrastructures
CSD	Central Securities Depository
DED	Deputy Executive Director
DNS	Deferred Net Settlement
DRMG	Departmental Risk Management Group
DvP	Delivery <i>versus</i> Payment
EAP	Emergency Application Package
ED	Executive Director
EFT	Electronic Funds Transfer System (Interbank Turkish Lira Transfer System)
ESTS	Electronic Securities Transfer and Settlement System
FMI	Financial Market Infrastructure
FSAP	Financial Sector Assessment Program
FSC	Financial Stability Committee
ICC	Interbank Card Center
ICH	Interbank Clearing House
IILM	International Islamic Liquidity Management
ILF	Intra-day Liquidity Facility
IOSCO	International Organization for Securities Commissions
LOLR	Lender of Last Resort
LOU	Legal Entity Identifier Operating Unit
MKK	Merkezi Kayit Kurulusu
PFMI	Principles for Financial Market Infrastructures
PIS	Participant Interface System
PSD	Payment Systems Department
PSL	Law on Payment and Securities Settlement Systems, Payment Services and Electronic Money Institutions (Law No 6493)
PSORL	CBRT Payment Systems Operational Rule Book
ROPSSS	Regulation on Operation of Payment and Securities Settlement Systems
ROSPSSS	Regulation on O versight of Payment and Securities Settlement Systems
RPS	Retail Payment System (Customers' Turkish Lira Transfer System)
RTGS	Real Time Gross Settlement
RWG	Risk Working Group
SLA	Service Level Agreement
TETS	Takasbank Electronic Funds Transfer System
TR	Trade Repository
TRY	Turkish Lira
XML	Extensible Markup Language

EXECUTIVE SUMMARY

- 1. The Central Bank of the Republic of Turkey (CBRT), the Capital Markets Board and the Banking Regulation and Supervisory Authority (BRSA) are the authorities with responsibility for specific elements of the Turkey National Payments System (NPS).** The CBRT, is the central bank and has regulatory and oversight responsibility for payment and securities settlement systems. The CMB has responsibility for safe and efficient functioning of the capital markets and is responsible for the CSDs, CCPs and TRs. The BRSA as part of its banking supervision responsibility is responsible for regulation of payment instruments and also regulation and supervision of non-bank e-money and payment institutions.
- 2. This assessment covers the following CBRT owned and operated FMIs: The Electronic Funds Transfer (EFT) system and the Electronic Securities Transfer System (ESTS).** The assessment takes into account the interlinkages of the EFT and ESTS with the other FMIs in Turkey: Takasbank and MKK.
- 3. The presentation of the assessment takes into account the integrated nature of the EFT and ESTS.** These two systems are part of an integrated system and share the operating rules, governance arrangements, risk management framework, access criteria and system interfaces and message formats. These two systems have been assessed separately, but common details are presented only in the assessment of the EFT system and this is referenced in the ESTS assessment. The recommendations table presents an integrated set of recommendations.
- 4. The EFT system broadly observes the risk management framework, Liquidity risk management, Default Management and operational risk management principles; and, partially observes the tiered participation principle. The rest are observed or not applicable.** The CBRT has a departmental level risk management framework and accordingly the Payment Systems Department (PSD) has developed a risk management framework for the CBRT payment and settlement systems. As the risk management framework is very recent, it has not been subject to internal audit, but as a policy the PSD risk management framework would be in the scope of internal audit department of the CBRT. The risk management framework by design is internally focused and does not explicitly take into account risks arising from external sources, linkages with other FMIs; and the risks posed by the CBRT payment and settlement systems to other FMIs. The participants of the EFT system are exposed to liquidity risk as there is a distinct pattern of concentration of transactions closer to the end of the day. The CBRT has developed a default risk management framework but this has not been tested comprehensively. The CBRT has developed a comprehensive operational risk management framework, however the business continuity procedures do not fully take into account operational risks arising from other FMIs and similarly the risks posed to other FMIs. The rules and procedures of the CBRT payment and settlement systems do not acknowledge tiered participation arrangements, however in reality there are some tiered participation arrangements.
- 5. The ESTS system broadly observes the risk management framework, liquidity, default management and operational risk principles; and, the rest are observed or not applicable.** The observations related to risk management framework, liquidity risk, default management and operational risk management are same as that for the EFT system. In the area of legal risk, there is an ambiguity in the rules and procedures of the CBRT payment and settlement systems and the overall legal framework, related to the sub-account structure of Takasbank for participants of money markets and the Government securities secondary market.

This creates a situation of potentially inadequate legal certainty for the protection of the securities holdings of the sub-account holders.

6. **The responsibilities A and B are broadly observed while the other three are observed.** The CBRT and the CMB are the two overseers of FMIs in Turkey and there is a clear articulation of the scope of each of these authorities. The regulatory and oversight framework for Trade Repositories (TRs), which are in the purview of the CMB, is in the process of development. The CMB has not established dedicated organization arrangements and allocated dedicated resources for its oversight activities.

I. INTRODUCTION

7. **The present document is the assessment of select Financial Market Infrastructures (FMI) in Turkey against the Committee for Payments and Market Infrastructures (CPMI) and International Organization of Securities Commission (IOSCO) Principles for Financial Market Infrastructures (PFMIs).** The assessment¹ was conducted in the context of field missions of the Financial Sector Assessment Program (FSAP) to Turkey in April 2016.

8. **This assessment covers the following FMIs: The Electronic Funds Transfer (EFT) system and the Electronic Securities Transfer System (ESTS).** These two FMIs form part of an integrated payment and securities settlement system called the “CBRT Payment and Securities Settlement System”. This integrated system also includes the Retail Payment System (RPS) which functions in Real Time Gross Settlement (RTGS) mode for customer initiated inter-bank transactions. The EFT system also functions in the RTGS mode, but is used exclusively for transactions related to participating banks proprietary transactions including for the settlement of primary and secondary market transactions on Government securities and central bank bills. The ESTS functions as a Central Securities Depository (CSD) for Government securities and central bank bills; the ESTS also functions as a Securities Settlement System (SSS) for the primary and OTC secondary market transactions between the banks on these securities.

9. **The assessment takes into account the interlinkages of the EFT and ESTS with the other FMIs in Turkey: Takasbank and Merkezi Kayıt Kuruluşu (MKK).** The Takasbank functions as the SSS for the secondary market transactions and repos on Government securities on the Borsa Istanbul (BIST); SSS for equities and corporate bonds traded on the BIST; and, as Central Counterparty (CCP) for the derivatives traded on the BIST. The Takasbank also operates a Securities Lending and Borrowing (SLB) platform; money market with banks and other institutional investors as participants; and a collateralized cash credit facility for banks and other institutional investors. The Takasbank is also the Legal Entity Identifier Operating Unit (LOU) for Turkey. The MKK functions as the CSD for equities and bonds traded in the BIST and for Government securities held by brokers and individual and institutional investors. The MKK holds securities in the name of the beneficial owner. There is a link between the MKK and ESTS to record movement of Government securities from banks to investors and vice versa. The MKK has an account at the ESTS to reflect the consolidated holding of Government securities in the MKK by investors. The MKK has also recently received a license from the CMB to function as a Trade Repository (TR) for OTC derivatives.

10. **The information used in the assessment included all relevant laws, rules and procedures governing the systems, material available on these FMIs in the public domain and from the CBRT and the CMB.** In addition, extensive discussions were held with the regulators and overseers – CBRT and CMB, the other FMIs – Takasbank and MKK; and commercial banks. In addition, the mission team was provided with:

- Self-assessment of the EFT system against the PFMIs.
- Self-assessment of the ESTS against the PFMIs.
- Self-assessment of the CBRT and CMB on their responsibilities for FMIs against the PFMIs.

¹ Harish Natarajan (World Bank) was the assessor.

- Excerpts of the daily, monthly, quarterly and annual reports produced by the CBRT related to the EFT, ESTS and the RPS.
- Excerpts of the documents related to the internal policies and procedures and deliberations of relevant working groups and committees.

11. **This assessment uses the methodology presented in the CPMI-IOSCO publication – “Assessment Methodology and Disclosure Framework for PFMIS (December, 2012)” and takes into account the considerations related to the FMIs operated by central banks, outlined in the CPMI publication “Application of PFMIs for central bank operated FMIs” (August 2015).**

12. **The presentation of the assessment takes into account the integrated nature of the EFT and ESTS.** These two systems are part of an integrated system and share the operating rules, governance arrangements, risk management framework, access criteria and system interfaces and message formats. The assessment tables for the EFT provide the detailed descriptions for these and these are referenced in the ESTS assessment table instead of repeating the same details again. The principles on credit risk, collateral management and liquidity risk have been assessed for ESTS, to account for the credit extension to participants which happens outside the EFT and ESTS system but it is integral to the functioning of both FMIs. In the summary section and recommendations table, the highlights of the EFT and ESTS assessments and the recommendations are presented together.

II. OVERVIEW OF THE PAYMENT, CLEARING AND SETTLEMENT LANDSCAPE

A. Regulation, Supervision and Oversight of Payment and Securities Settlement Systems

Institutional arrangements

13. **The Central Bank of the Republic of Turkey (CBRT), the Capital Markets Board (CMB) and the Banking Regulation and Supervisory Authority (BRSA) are the authorities with responsibility for specific elements of the Turkey National Payments System (NPS).** The CBRT, is the central bank and has regulatory and oversight responsibility for payment and securities settlement systems. The CMB has responsibility for the safe and efficient functioning of the capital markets and is responsible for the CSDs, CCPs and TRs. The BRSA as part of its banking supervision responsibility is responsible for regulation of payment instruments and also regulation and supervision of non-bank e-money and payment institutions.

14. **The CBRT is the regulator, overseer and licensing authority for the payment and securities settlement systems.** The CBRT published its objectives and policies as regards payment and securities settlement systems on its website in October 2014. According to this the main objective of the CBRT is to ensure “safe, uninterrupted, efficient and effective functioning of the systems.” The CBRT, is a member of the CPMI. The CBRT is the overseer of the payment and securities settlement systems. The Payment Systems Department (PSD) of the CBRT was established in November 2013 and is responsible for leading all initiatives related to payment and securities settlement systems, operating the core systems, and overseeing all payment and securities settlement systems in Turkey. The PSD is headed by an Executive Director (ED) reporting to one of the four Deputy Governors of the CBRT and executes its functions through four divisions – Payment Systems Operations, Regulation &

Oversight, Payment Transactions, and Research & Development; organized as two groups with each group reporting to a Deputy Executive Director (DED). The organization chart of the CBRT and the PSD is presented below.

Figure 1: CBRT Organization Structure

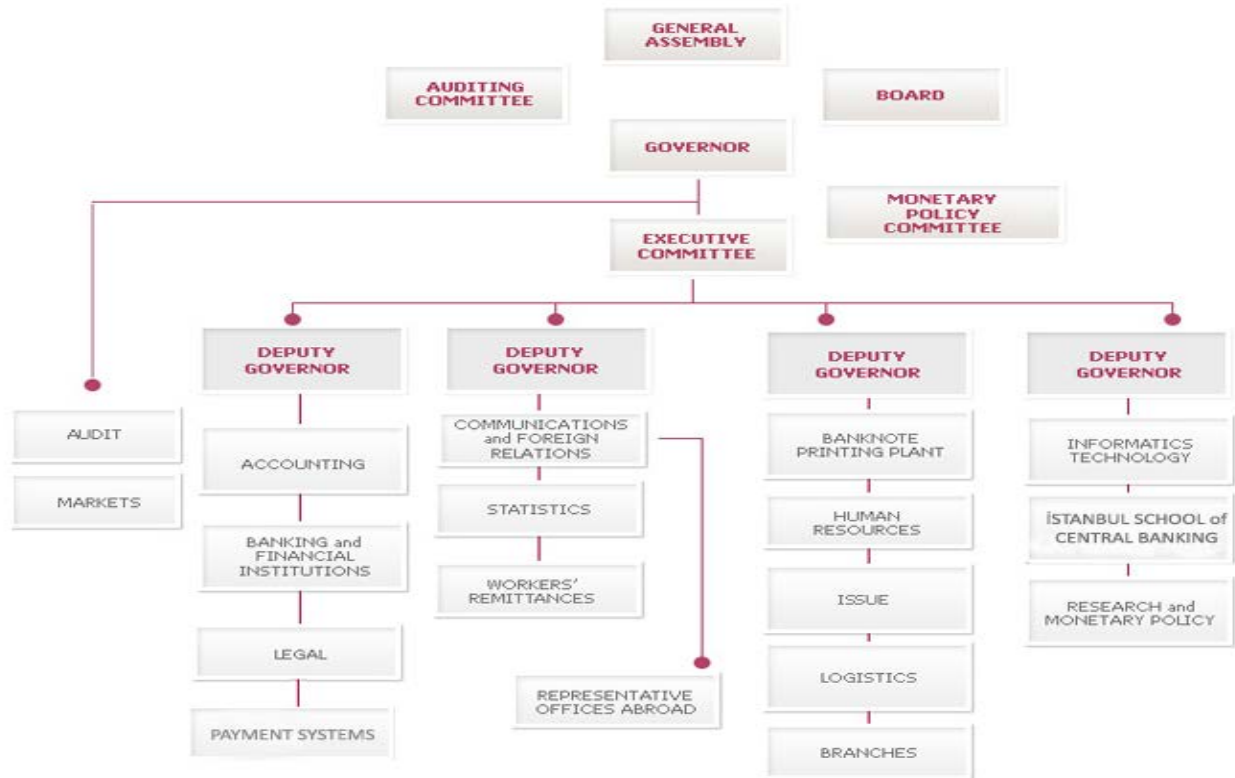
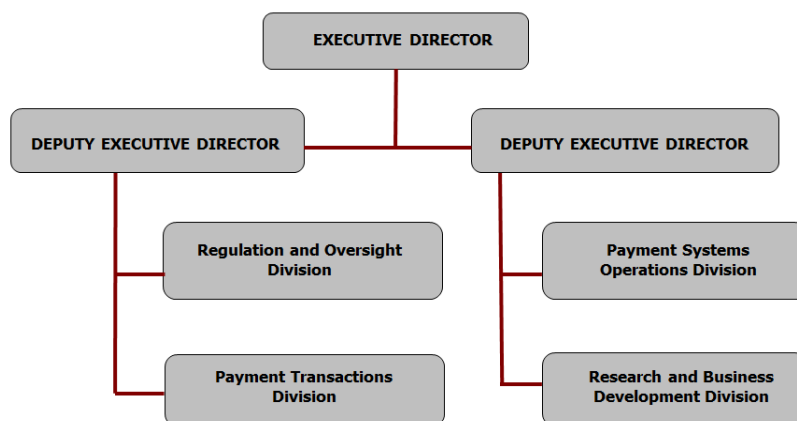


Figure 2: CBRT Payment Systems Department (PSD)



15. **The CMB is the regulatory and supervisory authority for the capital markets.** The Borsa Istanbul (BIST) is the only securities exchange and Merkezi Kayit Kurulusu (MKK) functions as Turkey’s central securities depository (CSD) and registrar of dematerialized corporate securities. Capital market trades conducted over BIST are settled and cleared by the

Istanbul Settlement and Custody Bank (Takasbank).² Takasbank also acts as the central counterparty (CCP) for derivatives transactions undertaken on BIST and at the Securities Lending Market operated by itself. Government bonds, treasury bills, CBRT bills, capital market instruments, share income certificates and international securities are traded on the Borsa Istanbul. The BIST bonds and bills market is the only organized, fully automated market for outright purchases and sales, as well as repurchase (repo) and reverse repurchase (reverse repo) transactions with fixed income securities. Treasury bills and government bonds are the most actively traded instruments. The CMB is a member of IOSCO and is responsible for regulation, supervision and oversight of Turkey's corporate securities market FMIs (CSD, CCP and TR) and their observance of the PFMIs.

16. **The BRSA is the sole authority for banking regulation and supervision.³ The fundamental goal of the BRSA is to ensure confidence and stability in the financial markets, provide effective operation of the credit market, and safeguard the rights and interests of depositors.** It was established in 1999 by the Turkish Government to improve the effectiveness of regulation and supervision of the banking industry. BRSA is public legal entity with administrative and financial autonomy. It was established according to Banks Act No. 4389 in June 1999 and began operating in August 2000. According to Banking Law (No. 5411), in order to establish confidence and stability in financial markets, the sound operation of the credit system, foster the development of the financial sector, and protect the rights and interests of depositors, the responsibilities of BRSA are three-fold: (i) Regulate, monitor and supervise banks and financial holding companies, as well as leasing, factoring and financing companies, and ensure the enforcement of their regulations; (ii) Become members of international financial, economic and professional organizations in which domestic and foreign equivalent agencies participate, to sign memorandum of understanding with the authorized bodies of foreign countries regarding the issues that fall under the Agency's duty field; and (iii) Fulfil other duties assigned by the law. *As part of its responsibility for banking supervision, the BRSA also regulates payment instruments and also regulates and supervises non-bank e-money and payment institutions.*

Legal and regulatory framework

17. **The CBRT derives its authority over the NPS from the Law on the Central Bank of the Republic of Turkey (CBRT Law) – Law no. 1211, which was enacted in 1970 and amended, most recently, in 2011; and the Law on Payment and Securities Settlement Systems, Payment Services and Electronic Money Institutions No 6493 (PSL) enacted in June 2013.** The CBRT law, as amended in 2011, authorizes the CBRT to establish payment, securities transfer and settlement systems, enact regulations to ensure the uninterrupted operation and oversight of existing or future systems, and to determine the methods and instruments, including the electronic environment for payments, that shall be used for payments. The PSL, granted the CBRT broad authorities and responsibilities for the nation's payment and securities settlement systems. In specific, the law assigned responsibility to CBRT to (i) prepare secondary regulation regarding establishment, operations, acquisition and transfers of shares, and oversight of payment and securities settlement systems within a year

² Takasbank is licensed as a non-deposit-taking sector-specific investment bank. Takasbank is regulated and supervised by the BRSA. However the CMB and CBRT also oversee Takasbank: as CCP and TRa central clearing institution by the CMB; and as SSS by the CBRT.

³ Source: BRSA:

https://www.bddk.org.tr/WebSitesi/english/About_Us/About_BRSA/5804brsa_booklet_14_07_2014_eng.pdf

(Articles 4.3 and 8.1); (ii) designate payment and securities settlement systems that are subject to the provisions of settlement finality and publish them in the Official Gazette;⁴ (iii) license payment and securities settlement systems; (iv) monitor licenses and revocation of licenses in certain situations defined by the Law; (v) overseeing all payment and securities settlement systems that operate in Turkey; and (vi) impose administrative fines on the system operators that violate the provisions of Law and secondary regulations.

18. **CBRT has issued implementing regulations for the operation and oversight of payment and securities settlement systems since the passage of the Payment Law.** CBRT's 'Regulation on Operations of the Payment and Securities Settlement Systems' and 'Regulation on Oversight of the Payment and Securities Settlement Systems' were both enacted in June 2014. They set forth the principles and procedures regarding operating licenses, system rules, operating conditions, the risk management framework, collateral, guarantee and credit mechanisms, acquisition and transfers of shares, and oversight. The "*Regulation on Operations of the Payment and Securities Settlement Systems*" (June 2014) – (ROPSSS) sets forth the principles and procedures regarding operating licenses, system rules, operating conditions, the risk management framework, collateral, guarantee and credit mechanisms, acquisition and transfers of shares. The "*Regulation on Oversight of the Payment and Securities Settlement Systems*" (June 2014) – (ROSPSSS) forms the basis for CBRT's oversight activities. The CBRT has also prepared the 'Communique on Information Systems of Payment and Securities Settlement Systems'. The Communique defines detailed provisions that system operators are expected to take into consideration regarding the management of information systems.

19. **Banking Law No 5411 lists payment services as one of the activities banks are allowed to carry out.**⁵ In specific Article 4 (d) mentions "Carrying out any type of payment and collection transactions, including cash and deposit payment and fund transfer transactions, correspondent bank transactions, or use of check accounts" and Article 4 (g) refers to "Issuing payment instruments such as credit cards, bank cards and travellers checks, and executing relevant activities."

20. **The PSL lists activities, which are considered to be payment services and also covers non-bank e-money providers and payment institutions.** Article 12 of the PSL lists the transactions that are to be deemed as "payment services". Among these activities are all operations required for operating a payment account, payment transactions including transfers of funds on a payment account of the payment service user and direct debits, issuing or acquiring of payment instruments, money remittance and services for mediating invoice payments. The PSL, includes provisions on the establishment, licensing, operating conditions, and oversight of payment services. It is also considered to be a general framework of payment services, and empowers the BRSA to prepare secondary regulations. Article 13 of the Law exhaustively lists the institutions authorized to perform the above listed payment services as: (i) The banks within the scope of the Banking Law; (ii) Electronic Money Institutions or (iii) Payment Institutions. It should also be noted according to Article 5 of the Regulation No. 29043 on Payment Services, Electronic Money Issuance, Payment Institutions and Electronic Money (27 June 2014), the Post Office (PTT) is also authorized to perform such payment services within the scope of the provisions of the Postal Services Law No. 6475.

21. **Cheque Law (No 5941), which was enacted in 2009 and amended further in 2012, governs all aspects of cheque payments.** It describes and defines the modalities for the issuance, acceptance and payment by cheque. The amendments to the law in 2012

⁴All relevant systems were designated in March 2014.

⁵ Source: <https://www.bddk.org.tr/websitesi/english/Legislation/Legislation.aspx>

decriminalized the issuance of bad cheques, imposing administrative sanctions in place of the criminal sanctions in the 2009 version of the law. The law enables the establishment and functioning of interbank cheque clearing houses, whose oversight and supervision vests with the CBRT under the CBRT Law and the PSL. The rules and procedures of the Inter-bank Cheque Clearing House (ICH) are governed according to the regulation issued by the CBRT.

22. **The Bank Cards and Credit Cards Law (No 5464), which was also enacted prior to the PSL⁶, serves to ensure efficient and effective functioning of the card payments system by establishing the principles and procedures applicable to the issuance, use, and clearing and settlement of bank cards and credit cards.**⁷ Organizations and entities which establish a card system, issue cards and enter into merchant agreements, as well as merchants and card holders are subject to and governed by the provisions of this law. This law is complemented by secondary regulation of BRSA.

23. **On the securities side, the issuance and management of public debt is governed by the Public Finance and Debt Management Law (Law No 4749).** The law establishes rules and procedures for the management of domestic and foreign public debt by the central government and other establishments with more than 50% of their capital belonging to the state, state banks, investment and development banks, municipalities, and other local government agencies. The CBRT as an agent of the Undersecretariat of Treasury, is responsible for issuing and settling government bonds and Treasury bills on behalf of the Treasury.

24. **The mandate of the Capital Market Law No 6362 (CML) is to “regulate and supervise capital markets to ensure the functioning and development of capital markets in a secure, transparent, efficient, stable, fair and competitive environment and to protect the rights and interests of investors.”** To this end, the CML provides for the establishment of the CMB, as the independent regulator and overseer of the capital markets in Turkey. Capital market instruments, their public offering and sale, exchange markets and other markets organized pursuant to the law, capital market activities, capital market institutions, and investor protection are subject to the provisions of the law. Settlement finality and irrevocability with respect to capital market transactions is provided under the law. In addition, the law enables the setting up of market infrastructures such as central securities depositories (CSD), central clearing institutions, central counterparties (CCPs) and trade repositories (TRs) and defines their activities. The law also has provisions for the setting up of the Turkish Capital Markets Association (TCMA) as a self-regulatory professional body for institutions authorized to perform investment activities. The CMB has issued secondary regulations related to CSDs and CCPs and is in the process of issuing the regulations for TRs.

B. Payment, Clearing and Settlement Systems in Turkey

25. **The CBRT owns and operates an integrated payment and securities settlement system comprising two payment systems – EFT and RPS, functioning in RTGS mode; and ESTS - a CSD-cum-SSS for Government securities and CBRT bills.** The EFT is an RTGS system and is fully integrated with the ESTS. The EFT was launched in April 1992, modernized in 2000, and again, in 2012. The second generation EFT added key functionality to the system, including a central queuing mechanism, funds management facilities, direct debit facilities, and phased closure of operations, as well as an emergency backup center. The third

⁶ Article 24 of the Payment Systems Law, exempts payment card related matters covered in the Bank Card and Credit Card Law: “The provisions of this Law shall not be applied to bank and credit card related matters regulated under the Bank Cards and Credit Cards Law Nr. 5464 dated February 23, 2006 and the regulations issued pursuant to the Law Nr. 5464.”

⁷<https://www.bddk.org.tr/websitesi/english/Legislation/8917bankcardsandcreditcardslaw.pdf>

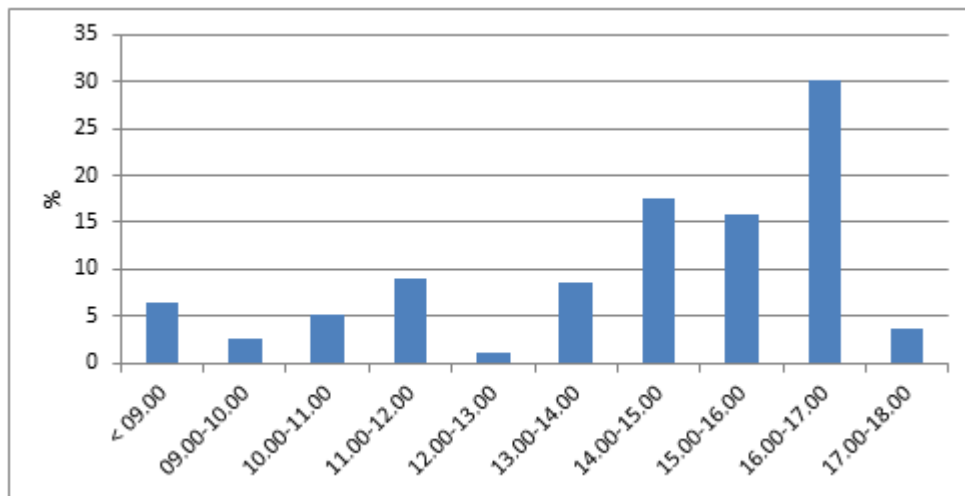
generation split the processing of interbank (time critical banking payments) and retail payments into two separate operations creating the RPS for customer initiated transactions and with the EFT covering inter-bank proprietary transactions. There is no transaction value ceiling or floor for these systems. According to the CBRT, by 2011, the rapid growth in the volume of low value retail payments was creating a significant risk to the settlement of large value and urgent payments, hence in consultation with the banks the RPS that was developed as a system for handling the customer initiated transactions was created. The EFT, RPS and ESTS all use the same inter-bank network and function as an integrated system. Message types are used to direct messages to the appropriate sub-system. The CBRT is the system owner and operator, the operative and administrative responsibility lies with the CBRT's Payment Systems Operation Division of the PSD and the technical responsibility with the Analytical IT Development Division (Information Technology Department). Any bank operating in accordance with the Banking Law can, with CBRT's approval, become a direct participant in the EFT, RPS and ESTS. There are a total of 54 participants, with the exception of the MKK all other participants are banks.

26. The participants in the EFT system and RPS are only banks. They have different accounts at the CBRT for the EFT and RPS and support only local currency credit transfers. The systems differ on the SLA for processing time and queue management features. While both components are based on the RTGS-principle, the EFT service level agreement (SLA) limits processing time⁸ to a maximum of one minute (current average is one second). In contrast, the RPS SLA limits the processing time to no more than 15 minutes (current average is 30 seconds). EFT settles on First-in first-out (FIFO)-basis based on priority and the RPS on By-Pass first-in first-out (By-Pass FIFO) basis; and EFT allows for queue management, whereas RPS does not. The EFT system also has an automated multilateral offsetting generated every minute. Participants have different settlement accounts for EFT and RPS, between which funds can be moved intra-day. Both components support only Turkish Lira (TRY) denominated credit transfers. In 2015, RPS settled 315,243,249 payments with a total value of TRY 9.99 trillion, whereas EFT settled 2,918,019 payments with a total value of TRY 42.73 trillion. The total value processed by the EFT and RPS system in 2015 was around 27.9 times the GDP of Turkey in 2015. The number of transactions processed by the EFT shows a distinct skew to the later part of the operational day – on a typical day around 50% in the last 2.5 hours of operations. In January 2016, around 15.94% of transactions were queued for inadequate balance and remained in the queue for an average of 7 minutes. The maximum queue time⁹ in January 2016, was around 18 minutes.

⁸ This refers to the time taken to process a transaction assuming funds are available.

⁹ This refers to the daily average time a transaction remains in queue.

Figure 3: Transaction pattern on a typical day in the EFT system



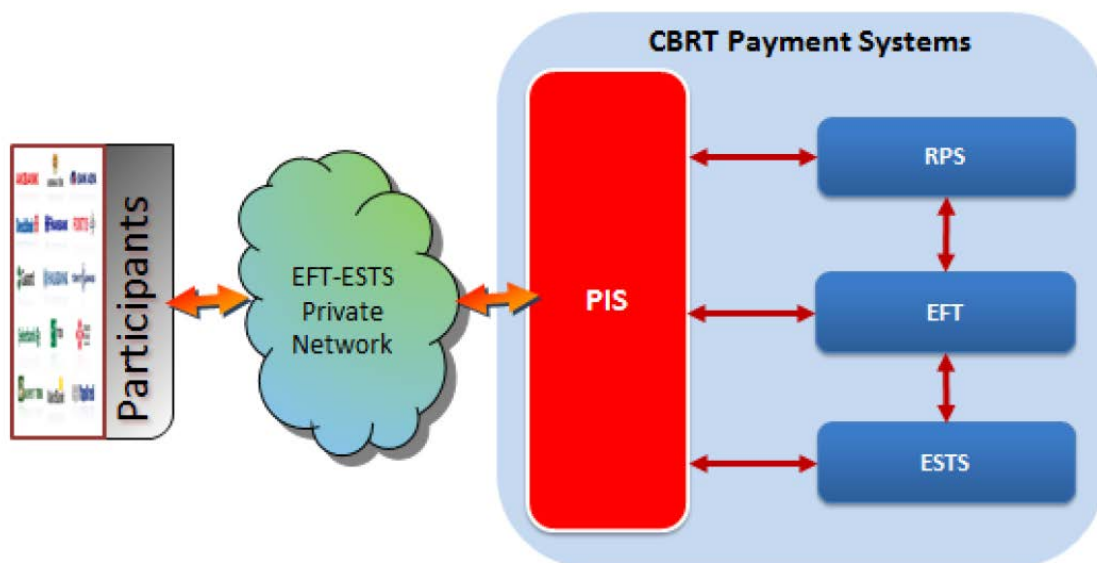
27. The ESTS is the CSD for government debt securities and the CBRT bills. It also functions as an SSS for the primary and OTC secondary market operations on these securities, settling in DVP mode using Model 1; the ESTS also supports the use of these securities as collaterals for the CBRT liquidity facilities. The ESTS maintains these securities in dematerialized form and records the securities ownership from their initial issue, transfers arising from secondary market transactions through to their final redemption. The ESTS works in an integrated manner with the EFT to support DvP, using Model 1 – gross settlement of both funds and securities leg. The proprietary securities holdings of banks are held at banks’ own accounts in the ESTS. Retail and institutional investors accounts are held in the MKK at the beneficial owner level. The MKK is also a participant in the ESTS and has an account to reflect the consolidated holdings of these securities held by investors. Banks also have separate collateral accounts, one each for respective CBRT liquidity facilities. The ESTS supports holding of sub-accounts for customers – called the “007” accounts. As a practice banks use this account only for intra-day transactions and at the end of day move all holdings in the “007” accounts to the investors account in MKK. The Takasbank, is an exception, and it uses this to also reflect holdings of investor’s assets as parts of its SSS activities. The ESTS also supports various business flows such as Free of Payment (FOP) transfers of securities between participants, repositioning of securities between the accounts of a participant, direct debiting of securities by the CBRT, and the CBRT Portfolio Operations. In 2015, the ESTS processed 302,512 securities transactions, 113,542 were DvP operations, for which the total value of corresponding payment legs settled in EFT was TRY 7.01 trillion; the rest were free of payment transfers.

28. **Operating hours of EFT, RPS and ESTS are weekdays (except national holidays) from 8:30 to 17:30.** The EFT and RPS settlement accounts are zero balance accounts, at the start of the day EFT and RPS receives the previous day’s closing balances as starting balance from the CBRT. The EFT and RPS receive electronic payment orders sent by the participants on an ongoing basis, debit the sender’s account if its balance suffices, credit the settlement account of the receiving participant, and inform the receiving bank. If funds are insufficient, the messages are queued. At the end of every business day, EFT and RPS send reconciliation reports to the participants and the CBRT.

29. **The Participant Interface System (PIS) is the system component used by**

participants for interfacing with the CBRT Payment Systems. The PIS is essentially a messaging system and is the gateway to the EFT, RPS and the ESTS system. The participants access PIS through a closed private network. The PIS checks the access rights, enforces security measures, verifies digital signatures, manages the encryption and decryption and validates messages. The PIS system is also used for distribution and access to end of day reports and files shared between the participants and the CBRT payment and securities settlement systems. The below figure shows how the various system components interact with each other.

Figure 4: CBRT payment and securities settlement Systems



30. **The banks have access to diversified sources of liquidity for use in the EFT and RPS system.** The reserve maintenance period for banks is 14 days, within this period the banks have access to their statutory reserves at the CBRT for use in the EFT and RPS system. The CBRT as part of its monetary policy operations offers collateralized Intra-day Liquidity Facility (ILF), overnight credit, daily repo operations, weekly repo auctions and finally the Lender of Last Resort (LOLR) facilities. These are collectively called CBRT liquidity facilities. The CBRT sets an overall borrowing cap across the standing facilities except the LOLR. The cap is based on the asset size of a bank. The banks in addition have access to: the BIST repo market; the inter-bank money market operated by the Takasbank; the cash credit facility offered by the Takasbank; and, pre-agreed credit lines between banks. The below table summarizes the various sources of liquidity, their operating hours, collaterals accepted, clearing and settlement (C&S) institution and the Average Daily Value (ADV) based on data for March 2016.

Table 1: Liquidity Facilities available to banks

Market	Operating Hours	Assets Accepted As Collateral	C&S Institution
BIST Debt Securities Market Repo Markets <u>Settles at 16.30</u> ADV: TRY 55.6 billion	Same Day Value: 09:15 - 14:00 Future date: 09:15-17:00	Government Securities, Lease Certificates ¹⁰ , CBRT Bills, Corporate Bonds	SSS: Takasbank Securities a/c: G-Secs: Takasbank; Corporate Bonds: MKK Funds a/c: Takasbank
Takasbank Money Market <u>Settles at 16:00</u> ADV: TRY 1.5 billion	10:00-12:00 13:00-15:30	Cash & Letters of Guarantee: TRY & Foreign Currencies; Government Securities and CBRT Bills; Euro Bonds; Mutual Funds Participation Certificates.	SSS: Takasbank Securities a/c: Takasbank Funds a/c: Takasbank.
Takasbank - Cash Credit Facility <u>Settles at 17:00</u> ADV: TRY 92 million	08:45 - 17:00	Equities; Government Securities and CBRT Bills; mutual funds participation certificate; and Letters of Guarantee.	Works as a bilateral arrangement.
CBRT Liquidity Facilities <u>Settles in real-time, DVP mode</u> ADV: TRY 104 billion	ILF: 09:00 - 15:00 For the others: 10:00-12:00 & 13:00-16:00,	Foreign Exchange Deposits, Foreign Exchange Banknotes Deposits, Eurobonds, Lease Certificates issued by the ALCTT (Asset Leasing Company of the Turkish Treasury), Foreign Bonds and Notes, International Islamic Liquidity Management (IILM) ¹¹ Issuances, TRY Government Bonds, CBRT Liquidity Bills,	SSS: CBRT Securities A/C: ESTS Funds A/C: EFT

31. **The Takasbank functions as the SSS for the secondary market transactions and repos on Government securities on the Borsa Istanbul (BIST); SSS for equities and corporate bonds traded in the BIST; and, as Central Counterparty (CCP) for the derivatives traded on the BIST.** The Takasbank also operates a Securities Lending and Borrowing (SLB) platform and acts as CCP at this platform as well; money market platform for banks and other institutional investors as participants; and a collateralized cash credit facility for banks and other institutional investors. The Takasbank is also the Legal Entity Identifier Operating Unit (LOU) for Turkey. The below charts shows the size of the various markets and the collaterals held by Takasbank for the operations across these markets.

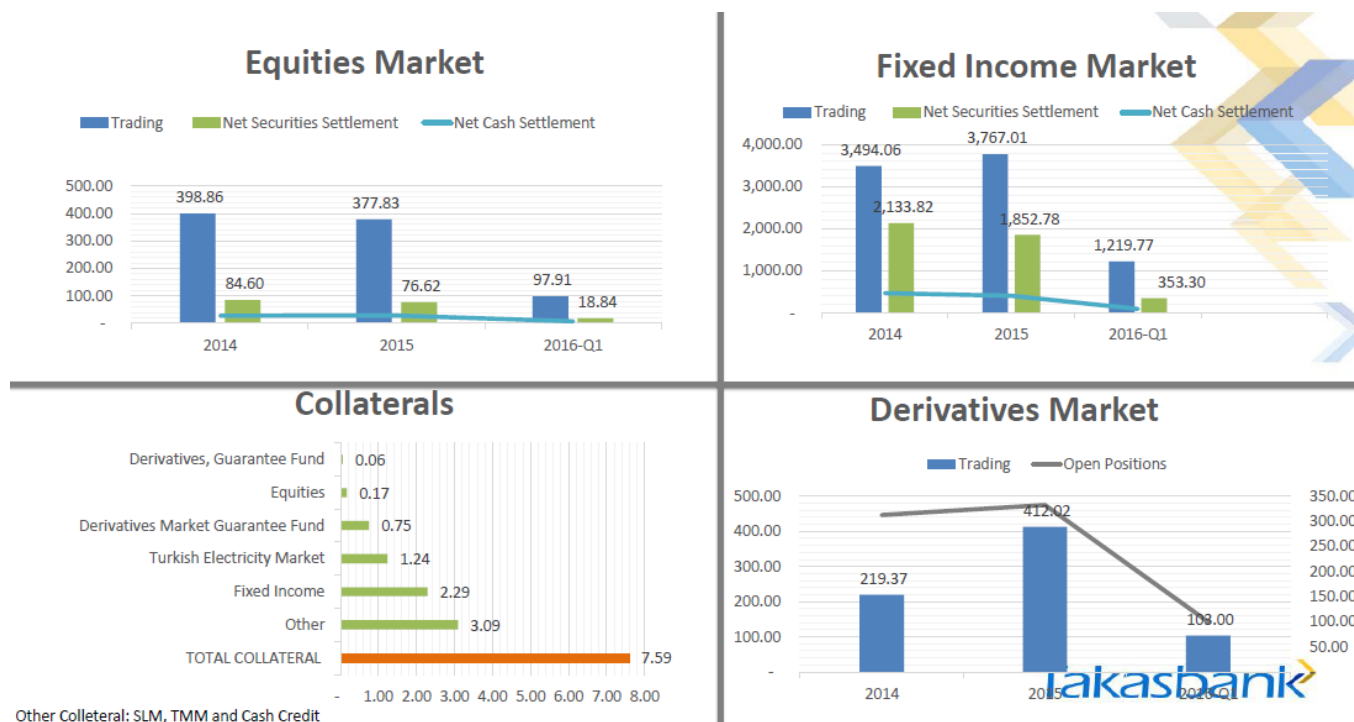
32. **The MKK functions as the CSD for equities and corporate bonds traded in the BIST. Government securities held by brokers and individual and institutional investors are also monitored on the MKK system.** The MKK holds securities in the name of the beneficial owner. There is a link between the MKK and ESTS to record movement of Government securities from banks to investors and vice versa. The MKK has an account at the ESTS to reflect the consolidated holding of Government securities in the MKK by investors.

¹⁰ These are Islamic securities.

¹¹ <http://www.iilm.com/the-issuance-programme/>

The MKK has also recently received a license from the CMB to function as a Trade Repository (TR) for OTC derivatives.

Figure 5: Value of trades across markets and collaterals held with Takasbank (in Billion USD)¹²



33. **Foreign exchange transactions are primarily conducted bilaterally between banks and by banks with the CBRT. There is no PVP arrangement for the inter-bank foreign exchange transactions.** The banks place their bid and asks for foreign currency at the CBRT's Reuters page. The CBRT seeks to intervene, processes these and settles the Foreign Currency (FCY) leg in correspondent accounts abroad. The CBRT also operates periodic FCY auctions which also function in the same way. The banks also use OTC trades, again using foreign correspondent bank accounts for the FCY leg. The banks have FCY accounts with the CBRT, but these are only used for reserve maintenance and transactions are not allowed.

34. **Interbank cheque transactions are cleared through Interbank cheque Clearing House (ICH) which is overseen by the CBRT.** Cheque clearing activities are executed in Istanbul and Ankara Clearing Houses. Both clearing houses have identical hardware and software, and can serve as a back-up center for each other. ICH functions as a Deferred Net Settlement (DNS) system for cheque transactions clearing and settlement. Transactions are settled, based on multilateral netting on T+2 basis, through the special settlement account of ICH at the CBRT. The ICH notifies its member banks and the CBRT of each bank's net debit or credit position. After all debit positions have been closed by the debtor banks, the payments are credited to the creditor banks.

35. **All domestic payment card transactions are processed through two domestic switches - the Interbank Card Center System (BKM) and Gosas.** The BKM is a DNS system for debit card and credit card transactions. All banks in Turkey issuing cards or

¹² Source: Presentation by Takasbank to the FSAP mission team

operating ATM and POS are members of BKM. Payments are settled, based on multilateral netting, on the books of the central bank through the BKM's special settlement account at the CBRT.¹³ Net results calculated on T+1 and settlement made on T+2. Credit and debit transactions with non-member banks or with banks outside Turkey are processed outside Turkey by Visa or MasterCard or via correspondent banking arrangements. BKM also offers BKM Express, a digital wallet, which can be accessed via smartphones too and allows, among others, Person-to-Person Transfers. The Gosas system also operates a card switch for its 10 members and processes the transactions between these banks. Gosas settles in DNS mode on T+2 in the books of Garanti Bank. The Gosas system also has an acceptance mark called "Bonus".

36. The Post and Telegraph (PTT) – the Turkish post operates postal banking services through its department "PTT Bank". The services provided by PTT Bank include: Postal Cheque Account – a regular checking account with a linked Maestro¹⁴ branded debit card (96.72 million); prepaid cards for social protection payments of Government and other international agencies (1.5 million); remittances, collection services, bill payments through its vast network of branches (4,414 – largest in Turkey) for over 359 institutions; operate network of ATMs (2124); and, ecommerce acquiring. The PTT bank also offers a mobile solution for accessing its various services. The PTT bank does not have direct access to the EFT and RPS, it accesses these through other banks. The PTT bank indirectly participates to the BKM.

37. Pursuant to the provisions the PSL, the BRSA has recently commenced the process of licensing e-money issuers and other payment institutions¹⁵. The PSL introduced the category of non-bank e-money issuers and other payment institutions and assigned the regulatory and supervision of these institutions to the BRSA. The BRSA issued the implementing regulations related to these in 2014. The BRSA has received 48 applications and is in the process of reviewing them. It has already provided licenses to 5 e-money issuers and 11 payment institutions. The applications of the remaining 32 are under examination. Some of these firms were already operating and applied under the "transition period" allowed under the PSL for institutions in operation prior to the PSL coming into force.

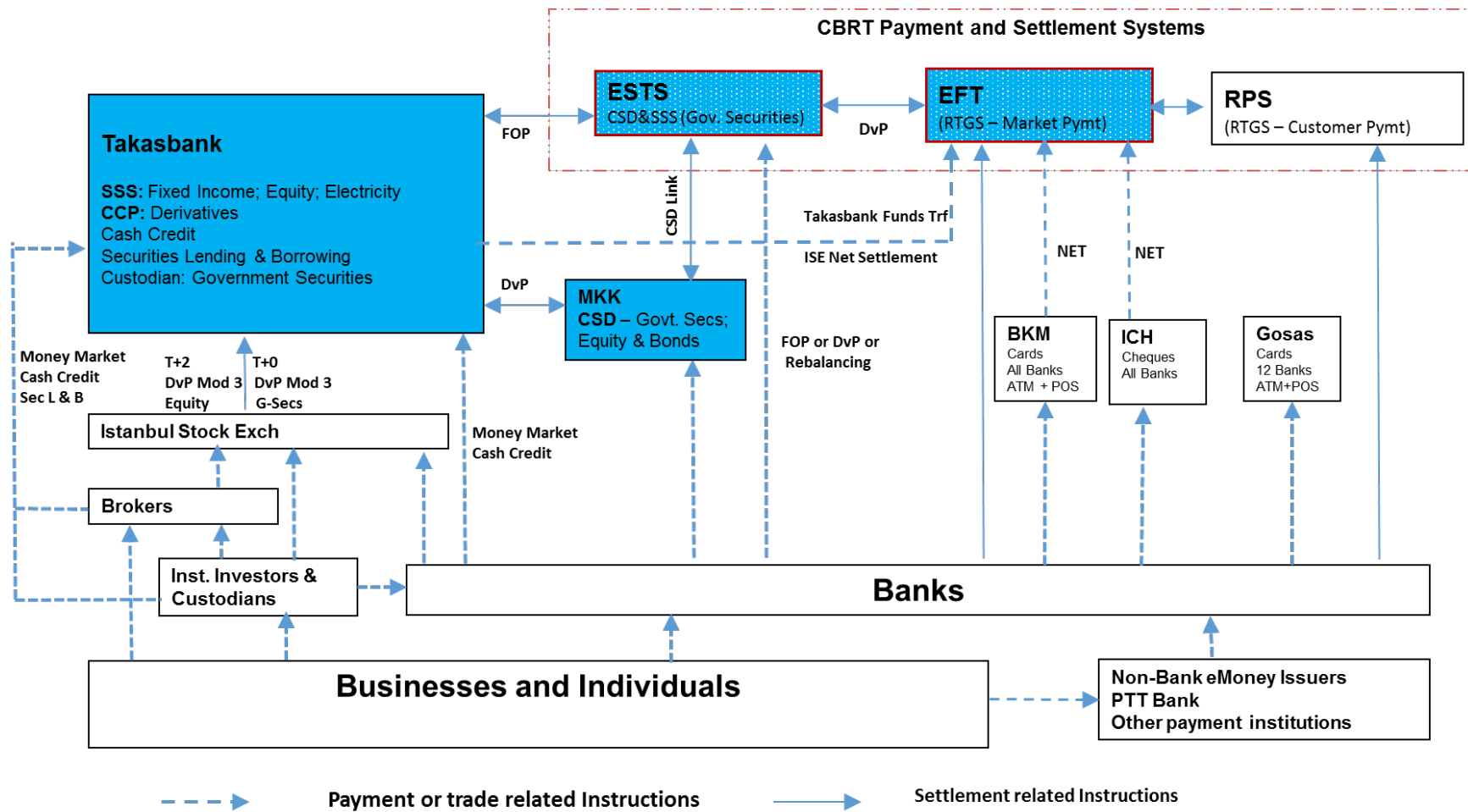
38. The below chart shows the interactions between the various elements of the Turkish NPS.

¹³ Source: BIS RedBook.

¹⁴ Debit card brand of MasterCard

¹⁵ E-money issuers maintain a prepaid account of the customer. Payment Institutions are those that provide services to payers and payees apart from offering e-money services; these include entities like bill payment aggregators.

Figure 6: The Turkey NPS



C. Planned Reforms

39. **The CBRT is in the process of developing an oversight framework which envisages articulating the specific standards to be used for specific types of systems, the data and reporting requirements.** As noted earlier the CBRT has issued a general policy statement on payment and securities settlement systems, which makes the PFMI applicable for all payment and securities settlement systems in Turkey. As part of the new oversight framework the CBRT intends to adapt the PFMI in terms of specific principles and key considerations which would be applicable for specific retail payment systems.

40. **The CBRT in co-ordination with the banks is evaluating inclusion of the TRY in the CLS System.**

III. SUMMARY ASSESSMENT

Principles: Key Findings and Follow up

General organization (Principles 1 - 3)

41. **The legal basis for the EFT and ESTS, are the CBRT law, the PSL and specific regulations pertaining to operations and oversight. The CBRT as the operator has developed detailed operating rules – the Payment Systems Operating Rules (PSOR).** The participants are required to sign a participation contract which binds them to the PSOR. The participation contract and the PSOR have a sound legal basis. All material legal aspects are adequately covered in the PSL and the CBRT law. All participants of the EFT system are subject to Turkish laws and regulations; and all operations are also performed in Turkey.

42. **The legal certainty for the arrangements with respect to the collateralized liquidity support relating to securities held in ICSDs, should be ascertained.** The usage of liquidity support against securities held in the ICSDs are very limited and the securities pledged as collateral are held in the name of CBRT, hence it is not an immediate issue of concern. However as a good measure it would be important to review the legal certainty for these arrangements.

43. **There appears to be some ambiguity on the legal basis for the protection of participant securities holdings which are transferred by participants to the account of Takasbank in ESTS.** Banks and individual and institutional investors participating in the Government securities secondary market at the BIST or in the inter-bank money market operated by the Takasbank, transfer securities to the account of Takasbank (in ESTS) for their securities transactions and also to be used as collateral. The specific provisions related to collateral in the PSL and CML are applicable, which protects the securities pledged as collateral, however the protection for securities holdings in the sub-accounts from any insolvency of Takasbank is not clear. The PSOR does not clearly recognize holding of government securities sub-accounts by a participant [Takasbank in this case]. The CML and other provisions related to CSDs do not specifically apply to this arrangement, as the ESTS is outside the scope of the CML. However, articles in CML pertaining to segregation of assets of investors in investor firms (article 46) appears to be applicable to Takasbank. Investor firms as defined in article 3(v) of the CML and investment services as defined in article 37 (g) encompass the activities of Takasbank as a SSS.

44. **The objectives and policies of the CBRT regarding Payment and Securities Settlement Systems place a high priority on stability, safety and efficiency.** The CBRT has documented governance arrangements for the institution as a whole that define clear and direct lines of responsibility and accountability. The same governance framework has been applied for the EFT system and ESTS as well, as a core responsibility of the PSD. There is a risk management framework for the CBRT operated payment systems. There is an existing process of auditing departmental risk management framework, however the PSD's risk management framework has not been audited yet. Mechanisms exist for involving stakeholders in decision-making process, and the CBRT effectively communicates with the stakeholders through different channels.

45. **The PSD has developed a risk management framework based on the ISO 30001 framework.** The risk management framework covers the specific risks outlined in the PFMIs. The framework is reviewed annually and is also subject to audit by the CBRT audit committee. The PSOR provides adequate powers to the CBRT to ensure conformance to the operating and security procedures outlined in the PSOR. The PSD has mechanisms in place for measuring and monitoring specific aspects of liquidity risk and operational reliability of the EFT system.

46. **The risk management framework is however internally focused and does not explicitly take into account the dependencies on other FMIs and also internal systems of the CBRT.** In particular, the operations of the EFT system has a heavy dependence on the money markets operated by Takasbank and the CBRT markets department, given their role in providing liquidity to participants. The Markets Department is the decision maker on the provision of the CBRT liquidity support facilities and also has its own systems and processes. This risk however is to an extent mitigated as the Takasbank and other FMIs are subject to the oversight of the CBRT and the Markets department also has its own risk management framework and co-ordination framework is in place.

Credit and liquidity risk management (Principles 4 - 7)

47. **The credit risk in the EFT and ESTS stems from the CBRT liquidity support operations to the participants.** The liquidity support operations are not integrated into the EFT system and as such are handled by the markets department. The credit risk is considered as part of the EFT risk management framework, but the full treatment of the credit risk from liquidity support operations is in the domain of the markets department. The markets department's credit risk management framework includes instituting overall borrowing limits, requiring all credit facilities to be collateralized with good quality securities, and applying haircuts. The collaterals are re-valued daily and the CBRT has the rights to ask for additional collateral when there is an adverse movement.

48. **The collateral management system and processes are external to the EFT and ESTS and are managed by the CBRT markets department.** The extension of liquidity support is considered a monetary policy instrument. The choice of securities, haircut rates, valuation practices and operational arrangements are an integral part of the CBRT monetary policy operations framework. The CBRT maintains a list of eligible securities and their haircut rates. The haircut rates depend on the types and maturity of securities. The eligible securities are TRY government bonds, central bank bills, lease certificates issued by ALCTT (Asset leasing company of the Turkish Treasury), foreign bonds and notes, IILM issuances and foreign exchange deposits and foreign exchange banknotes deposits.

49. **The CBRT as the operator of the EFT system and ESTS, by itself is not constrained in TRY liquidity. However the participants could face liquidity shortages.** The participants have access to liquidity support from the CBRT and the inter-bank money markets. These liquidity options are collateralized and in the case of the intraday and overnight CBRT liquidity support there is an overall borrowing limit for the participant. However, liquidity support is available without any limit within the framework of LOLR. There is no explicit stress testing mechanism in place, however there is an ongoing review of the policy framework relating to the CBRT intraday liquidity support. There is however no set time-period for this. The transaction pattern in the EFT system shows existence of substantial liquidity risk. The CBRT has studied this and is currently evaluating suitable options.

Settlement (Principles 8 - 10)

50. **The EFT functions as a RTGS system with final settlement through the day and settles in central bank money.** Settlement finality is protected in the PSL and clearly articulated in the PSOR and as such has a sound legal basis.

51. **In ESTS, securities are dematerialised and processed in book entry form. Although it was possible to rematerialize and physically deliver the securities previously, as of November 2012 physical printing of government debt securities has been terminated.** With the redemption of latest printed securities, there have been no printed government debt securities since July 2013. Since government debt securities are only in dematerialised form, there is no risk associated with the storage and delivery of physical instruments.

CSD and exchange-of-value settlement systems (Principles 11, 12)

52. **The ESTS functions as a CSD-cum-SSS for Government securities and central bank bills. The ESTS system settles the securities transactions in DVP mode using model 1. The funds leg is settled at the EFT system.** The CBRT, in the capacity as the agent of the Prime Ministry Undersecretariat of Treasury, carries out the dematerialised issue, custody and redemption of government securities, which are issued by the Prime Ministry Undersecretariat of Treasury, by the CBRT, and by other public institutions. Since the CBRT is the CSD for the securities in ESTS, there is neither custody risk stemming from the insolvency of the CSD nor the risk of the participants' securities being sequestered due to the other activities of the system operator. In ESTS, the securities owned by the participants' customers are segregated from the participants' own holdings and kept in a special securities account of the MKK. MKK keeps these securities by customer details in its system enabling customers to track their holdings. All the operations by the CBRT in ESTS require dual approval, are logged and, if needed, can be tracked. During the end of day operations of ESTS, participants are notified about their securities account holdings and their daily operations for reconciliation purposes. All the securities held in the ESTS are in dematerialized book entry form, there are no physical securities.

Default management (Principles 13, 14)

53. **The PSD has developed a default management procedure recently covering all the payment and securities settlement systems operated by the CBRT.** The default procedure is consistent with the provisions in the PSOR and derives its legal basis from the PSL. Given

that the procedure was adopted very recently it has not been tested in its entirety. The participants in the system are all banks, except the MKK. Banks are supervised by the BRSA and the MKK by the CMB. These authorities have the sole right related to insolvency or bankruptcy of these participants. There are existing co-ordination and information sharing arrangements between the CBRT, BRSA and the CMB. Hence there is high degree of certainty that the CBRT will have adequate notice to execute its default management process. Nevertheless, any delays in executing the default management process, could escalate the risks in the system.

General business and operational risk management (Principles 15 - 17)

54. **The EFT and ESTS are central bank operated FMIs, as such aspects related to liquid assets, wind down plans and viable plan for raising additional capital are not applicable.** The pricing policy for the EFT system aims for a full investment and operational expenses recovery. The pricing structure is clear and communicated to the participants. The fees are recovered on a monthly basis and the corresponding information is available to participants. The costs of the EFT system are covered under the general budget of the CBRT and subject to the standard audit process.

55. **The CBRT Payment and Securities Settlement Systems have a comprehensive operational risk management Framework spanning people, process and systems.** The risk management framework is reviewed once a year. Industry best practices for IT risk management framework – ISO 27001 and ITIL for IT services management, have been used. There are adequate processes and procedures in place to address people aspects and the IT systems and processes have been developed using industry standards and best practices. There are periodic IT security reviews and there are dedicated organizational arrangements in place for monitoring and managing the IT security aspects. The IT infrastructure is built in a way that there is no single point of failure and there is full-fledged backup site which works on a load sharing basis with the main site. In addition there is an application package developed using a completely different hardware and software platform to cover the risk of a simultaneous impact on both the infrastructures, which is a possibility in particular with cyber risk incidents.

56. **There is a well-laid out BCP plan with an organized governance arrangement to monitor and review its execution. However the BCP scenarios are focussed on the infrastructure of the CBRT payment and securities settlement systems.** Scenarios, either arising within the CBRT payment and securities settlement systems, within the CBRT or externally, which can cause a widespread impact have not been included. The participants are included in the BCP tests and there are plans underway to include complex scenarios to fully cover business continuity risks arising from and posed to other FMIs and participants– in particular Takasbank and MKK.

57. **The PSOR covers operational risk management in articles 17-20, however there is no explicit mandate on this and there is no structured process to measure ongoing compliance with these aspects.** However, the CBRT recently surveyed the participants to assess their BCP plans and cyber resilience. All the participants reported having BCPs, but there were some gaps in terms of the quality of the BCP and cyber resilience readiness of some participants. The CBRT is already addressing this as part of its revised business continuity guide.

Access (Principles 18 - 20)

58. **Criteria and requirements for participation are clearly stated in the PSOR and are disclosed to related parties.** Only banks and the MKK, which is a special participant of ESTS for the implementation of safekeeping of the securities in the name of customers, are accepted as participants in the CBRT payment and securities settlement systems. Only banks are participants in the EFT system. The policy decision on only allowing access to banks has been taken based on considerations of liquidity risk management. The CBRT does not allow access to specific components of the CBRT payment and securities settlement systems, all participants have access to the EFT, RPS and ESTS system. The MKK is the only exception. The CBRT monitors compliance to operational aspects of the participation criteria and is guided by the BRSA for the continued qualification of the participant to function as a bank. Suspension and orderly exit rules are stated in the PSOR and disclosed to participants.

59. **The PSOR acknowledges and regulates only the direct participants in the CBRT payment and securities settlement systems and there is no definition or rules set for indirect participation; however the EFT system in practice does have tiered arrangements.** Entities that are not eligible for participation can perform operations through the participants, but are treated as customers of participants, rather than indirect participants. One bank and one entity carrying out electronic payment services, are accessing the EFT system through other banks. Other market intermediaries and non-bank financial entities also access the services of the EFT and also likely other elements of the CBRT payment and securities settlement systems. The usage of TETS by brokers and other market intermediaries is also an example of a tiered participation arrangement for the EFT system. The ESTS system however by design does not have tiered participation. The CBRT has developed capability to track the details of the initiator, recipient and purpose of transactions, based on specialized fields in the message formats. These tools can be used to develop a comprehensive monitoring framework for tiered participation arrangements.

60. **The ESTS and the MKK system have an issuer CSD-investor CSD link.** The risk management framework however does not explicitly acknowledge this arrangement as a link. However the MKK is overseen by the CBRT for its SSS functions and hence also has a full integrated view of the risks arising from the ESTS-MKK link.

Efficiency (Principles 21, 22)

61. **Message exchange of the CBRT Payment and Securities Settlement System is managed via secure services using industry standard technologies and using XML based proprietary message formats.** It is possible to easily convert XML messages used in the CBRT payment and securities settlement systems into other message formats. The PIS used to interface with the CBRT payment and securities settlement systems offers adequate tools to allow STP mode.

62. **The process for secondary market transactions on Government securities varies based on the nature of counterparty, creating inefficiencies for the participants.** The processes related to settlement of the securities and funds leg vary based on whether the counterparty of a transaction for a bank is another bank, a custodian, individual investor or other institutional investor. Addressing this will require some changes in ESTS and introducing new interfaces between the MKK, ESTS and Takasbank.

Transparency (Principles 23, 24)

63. **Rules and procedures for the CBRT Payment and Settlement Systems are defined clearly and shared with participants.** System descriptions, system rules, general structure and workflows, summary statistics and pricing policy are disclosed to the public through the CBRT web page and the CBRT Payment Systems User Group web site. Pricing tariff is defined yearly based on pricing policy and disclosed to participants and to the public at least one month before its entry into force. The CBRT is committed to publish the details of the assessment of the EFT system and ESTS in line with the requirements of this principle.

Table 2: Ratings Summary for the EFT system

Table: Ratings Summary of the Principles	
Assessment category	Principle
Observed	Principles 1,2,4,5,8,9,15,16,18,21,22,23
Broadly observed	Principles 3,7,13,17
Partly observed	Principles 19
Not observed	
Not applicable	Principles 6,10,11,12,14,20,24

Table 3: Ratings Summary for the ESTS

Table: Ratings Summary of the Principles	
Assessment category	Principle
Observed	Principles 1,2,4,5,8,9,11,15,16,18,19,20,21,22,23
Broadly observed	Principles 3,7,13,17
Partly observed	
Not observed	
Not applicable	Principles 6,10,12,14,24

Recommendations for EFT system and ESTS¹⁶

Table 4: List of prioritized recommendations for the EFT system and ESTS

List of Prioritized Recommendations for Principles				
Principle	Issues of Concern and Other Gaps or Shortcomings	Recommended Action	Relevant Parties	Comments and Priority
1	Conflict of law with respect to collateral holdings in ICSDs	The CBRT could consider seeking an external legal opinion on the enforceability of the PSOR, all contractual arrangements and also with respect to the certainty of legal basis with respect to the securities held in the ICSDs.	CBRT	Low
1	Protection of securities holdings in Takasbank.	The CBRT should review the legal and regulatory framework for the protection of customer assets held by Takasbank and implement specific amendments if any gaps are identified.	CBRT, CMB	High
2	Lack of explicit performance indicators for system as a whole.	The CBRT could consider including specific indicators related to efficiency and effectiveness of the EFT system and satisfaction levels of the participants, as use these to measure the performance of the EFT system.	CBRT	Medium
3	Risk management framework is internally focused.	The CBRT should include its dependencies on other FMIs and also the internal dependencies for the EFT system in the risk management	CBRT	High

¹⁶ The priority designation also includes reference to time-frame. High priority recommendations are recommended to be implemented in the short-term; medium priority in the medium term and low priority in the medium to long term.

List of Prioritized Recommendations for Principles

Principle	Issues of Concern and Other Gaps or Shortcomings	Recommended Action	Relevant Parties	Comments and Priority
		framework for the EFT system.		
4	The credit risk management framework is not fully integrated into the CBRT payment and securities settlement system credit risk management.	The credit risk management framework of the Markets department of the CBRT should be more fully integrated in to the risk management framework of the EFT system.	CBRT	Medium
7	Gaps in liquidity risk management.	<p>The risk management framework of the EFT system could consider daily and periodic analysis of the liquidity risk jointly by the PSD and Markets departments of the CBRT. There could be additional indicators like estimate of participants available both from the CBRT and also the inter-bank money markets. This could build on the framework being established by the BRSA on liquidity risk.</p> <p>The CBRT could consider encouraging earlier settlements in the inter-bank money markets to allow for more liquidity to flow into the EFT system earlier. Regulating and structuring money markets other than the CBRT money market is not the responsibility of the CBRT.</p>	CBRT	High

List of Prioritized Recommendations for Principles

Principle	Issues of Concern and Other Gaps or Shortcomings	Recommended Action	Relevant Parties	Comments and Priority
		<p>The CBRT as part of the ongoing review of its current policy on liquidity risk, analyze options to make intra-day liquidity support by the CBRT more attractive to the participants and implement suitable options.</p> <p>The CBRT could evaluate if pricing policies could incentivize earlier settlement perhaps as part of overall throughput guidelines.</p>		
13	Default management	<p>The CBRT should conduct periodic testing of the default management procedure as a whole and include the participants also in this exercise. This could be integrated with the BCP or conducted as a standalone exercise at least once a year.</p> <p>As part of the publication of the disclosure framework or separately the CBRT should publically disclose key elements of the default and operationsl rules of the EFT and ESTS system.</p>	CBRT	Low
17	Gaps in Business Continuity Plans	The CBRT could build on the specific provisions in the PSOR to include explicit mandates with respect to operational risk	CBRT	High

List of Prioritized Recommendations for Principles

Principle	Issues of Concern and Other Gaps or Shortcomings	Recommended Action	Relevant Parties	Comments and Priority
		<p>management for its participants and have a mechanism to assess compliance to those on an ongoing basis.</p> <p>The CBRT could consider including more stringent operational risk management measures for the participants with a large share of transactions, based on the monthly network analysis being carried out.</p> <p>The CBRT could also consider incorporating a more structured assessment of the operational risks it can pose to other FMIs and the risks it could be exposed from them. This assessment could become the basis for the more detailed and complex scenarios being proposed for inclusion in the revised business continuity plans.</p>		
19	No monitoring of Tiered participation	The CBRT should consider instituting mechanisms to collect information, about the non-bank financial companies that access the services of the EFT through participants. Information like the terms of the service between the participant and the non-bank financial entity, the typical transaction	CBRT	Medium

List of Prioritized Recommendations for Principles

Principle	Issues of Concern and Other Gaps or Shortcomings	Recommended Action	Relevant Parties	Comments and Priority
		volume and value, and any credit extension and liquidity facilities offered. The CBRT should then assess any risks arising from these tiered arrangements.		
21	Lack of efficiency in Government securities secondary Market	Currently the process varies by counterpart. Addressing this will require some changes in ESTS and introducing new interfaces between the MKK, ESTS and Takasbank.	CBRT	Medium
23	Operating rules and procedures are not publically disclosed	The CBRT as part of the publication of the disclosure framework or separately should include details of the key elements of the operating rules and procedures.	CBRT	Medium

IV. SUMMARY ASSESSMENT

Responsibilities: Key Findings and Follow up

64. **The CBRT law, the PSL and the CML clearly layout the specific payment and market infrastructures that are subject to regulation, supervision and oversight of the authorities. These laws put together, assign the responsibility for regulating, supervising and overseeing payment systems and SSS with the CBRT; and CCPs, CSDs and TRs with the CML.** The authorities have further publically announced their adoption of the CPMI-IOSCO PFMI. The CMB has specifically stated that the PFMI would be applicable for the MKK and Takasbank. The CBRT in its public statement on its objectives for payment and securities settlement systems has articulated that it will apply the PFMI to all the payment and securities settlement systems under its oversight. The CBRT has further issued the ROPSS, which articulates its powers to regulate and oversee the payment and securities settlement systems. The CMB has issued specific regulations/communiques for the CSDs and CCPs, however it has not yet issued regulations for TRs. The powers of the CMB with respect over TRs is however clear and derives from the CML. Also, while the CMB has licensed the MKK as a TR, it has not yet commenced operations and the CMB as part of its approval to MKK to commence operations as a TR intended to issue a regulation/communique to fully articulate its regulatory and oversight actions and powers related to TRs.

65. **The CBRT and the CMB have the relevant powers to obtain information and induce change to carry out their oversight activities.** These powers have been explicitly articulated in secondary regulations with respect to the payment systems and SSS, by the CBRT. The CMB has articulated its powers with respect to the CCPs and SSS. However its powers with respect to the TRs have not been explicitly articulated yet. At this point, however there are no TRs in Turkey. The CMB has licensed the MKK to function as a TR. However prior to its becoming operational, the CMB intends to issue specific regulations.

66. **The CBRT and the CMB has adequate resources and qualified staff to carry out its oversight and regulatory responsibilities with respect to the FMIs in its oversight.** The CBRT has specific designated staff for carrying out the oversight activities. The CMB's oversight activities are housed in a department which also includes regulation and supervision of brokers and also the BIST. The CMB has however not allocated dedicated resources for the oversight of FMIs under its purview.

67. **The CBRT and the CMB have articulated their policies with respect to FMIs through a policy statement published on their respective websites. The policy statement is consistent with the respect legal powers and regulations issued by these authorities.** The CBRT and the CMB have issued policy statements articulating their adoption of the PFMI. In the case of the CBRT it has required all the payment and securities settlement systems in its purview to adopt the PFMI and has already completed the self-assessment against the PFMI for the FMIs operated by it. The CBRT in addition has asked the Takasbank and the MKK, to complete self-assessments as SSS. The CMB has asked the Takasbank and the MKK to complete self-assessments as CCP and CSD respectively. The legal and regulatory measures governing the functioning of the CBRT and the CMB allow data sharing amongst them and with other related authorities, in particular the BRSA which regulates the Takasbank as a banking institution. The FSC provides the structured mechanism for sharing, analyzing and resolving any issues related to the financial sector that may impact financial stability. This

mechanism is also used for FMI related discussions. There are also other ad-hoc mechanisms in place to share and seek information and collaborate on an as needed basis.

Table 5: Ratings Summary for the Responsibilities

Table: Ratings Summary for the Responsibilities	
Assessment category	Responsibility
Observed	Responsibility C,D and E
Broadly observed	Responsibility A, B
Partly observed	-
Not observed	-
Not applicable	-

Table 6: List of prioritized recommendations for responsibilities

List of Prioritized Recommendations for Responsibilities				
Responsibility	Issues of Concern and Other Gaps or Shortcomings	Recommended Action	Relevant Parties	Comments and Priority
A	Lack of regulatory framework for TRs	The CMB should ensure that it issues a regulation/communique on TRs, before it accords approval to the MKK to commence its operations as a TR.	CMB	Medium
B	Oversight resources	The CMB could consider assigning specific responsibilities to staff with respect to the FMIs in its scope. The CMB should issue the regulations related to TRs ahead of MKK commencing its operations.	CMB	Medium

V. DETAILED ASSESSMENT REPORT – EFT SYSTEM

PS	CSD	SSS	CCP	TR
●	●	●	●	●

<p>Principle 1: Legal basis An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.</p>	
Key consideration 1	<p>The legal basis should provide a high degree of certainty for each material aspect of an FMI’s activities in all relevant jurisdictions.</p> <p>The main legal and regulatory measures related to payment and settlement systems are listed below. The detailed discussions on these measures are in paragraphs 17-24.</p> <p>CBRT Law: This law covers the institutional arrangements and powers of the CBRT, inter alia this includes powers of oversight over payment and settlement systems and rights to operate payment and settlement systems.</p> <p>PSL: This is a specialized law covering payment and settlement systems and establishes the legal basis for finality, netting and protection of collateral rights. This law also establishes the regulatory and oversight powers of the CBRT over payment and settlement systems. The CBRT has issued regulations detailing the regulatory framework for operation and licensing of payment and settlement systems and the oversight arrangements for these.</p> <p>CML: This law covers the institutional arrangements and powers of the CMB and assigns regulatory and oversight powers over CSDs, CCPs and TRs to the CMB. This law also covers finality, netting and protection of collateral rights for the FMIs in the purview of the CMB. The CMB has issued specific regulations and communiques on CCPs, CSDs and other aspects.</p> <p>In addition the CBRT as the operator of the EFT and ESTS has also established operating rules – the PSOR, as required under the PSL.</p> <p><i>Material aspects and relevant jurisdictions</i></p> <p>The EFT system is operated by the CBRT and functions as a RTGS system with periodic multilateral offsetting. All the system participants are banks licensed for operations in Turkey by the BRSA and fully subject to the laws of Turkey, including for its participation in the EFT system.</p> <p>The EFT system by itself does not offer any liquidity support, however all participants except the MKK, can avail the liquidity support from the CBRT, the inter-bank money market, Takasbank cash credit facility and credit lines amongst banks.</p> <p>The CBRT liquidity supports are: intra-day credit, overnight credit; 1-week repos; and, under the LOLR facility. The liquidity support offered by the CBRT</p>

are all collateralized. The accepted collaterals are Turkish government bonds, central bank bills, lease certificates issued by ALCTT (Asset leasing company of the Turkish Treasury), foreign bonds and notes, International Islamic Liquidity Management (IILM)¹⁷ issuances, foreign exchange deposits and foreign exchange banknotes deposits.

The inter-bank money markets are also collateralized and accepted collaterals include the ones used for the CBRT liquidity support and in addition corporate bonds, foreign currency and gold.

The material aspects for the EFT system that require legal certainty are:

- Right of the CBRT to operate payment systems
- Rights and interests of parties
- Settlement Finality
- Delivery *versus* payment
- Collateral rights
- Netting
- Electronic means of initiating transactions

Relevant jurisdictions

The relevant jurisdiction for the functioning of the CBRT payment and settlement systems is Turkey.

Legal basis for each material aspect

Right of the CBRT to operate payment systems

The article 4(f) of the CBRT Law lists establishment and operation of payment, securities and settlement systems, as part of the fundamental duties and powers of the CBRT. The same article vests oversight powers with the CBRT over all payments, securities transfer and settlement systems. This article was amended as part of the PSL and as such needs to be read together. These terms are defined in the PSL (art 3).

Rights and interests of parties

The rights and responsibilities of the CBRT and system participants are defined clearly in the Payment Systems Operating Rules (PSOR) - sections 3, 4 and 5. Article 4(2) of the PSL establishes that rights and responsibilities of the operator and participants would be as per the contract between the operator and participants and the system rules established by the operator. The PSOR constitute the system rules of the EFT system and all participants of the EFT execute a “Participation Contract” with the CBRT as the operator of the EFT system.

The PSOR, means of initiating transactions, message structure and associated aspects are included as the annexes of the “Participation Contract”. The article 3 of the “Participation Contract”, make the annexes to the contract an integral part of the contract and are as such considered binding.

¹⁷ <http://www.iilm.com/the-issuance-programme/>

Settlement Finality

The Article 10 of the PSL establishes settlement finality and irrevocability for systems designated by the CBRT (Art 11). The CBRT has designated the EFT, RPS and the ESTS in the official gazette and accordingly the provisions of article 10 of the PSL covers the EFT system.

Article 10(1) of the PSL requires the following to be defined in the operating rules of the system: the point of time when a transaction become irrevocable and the time of entry and time when a settlement of a transfer order is final.

Article 10(3) of the PSL further elaborates that any decisions, including those relating to insolvency and bankruptcy, taken under any other law regarding any transfer orders, would be valid only for those that enter the system after the system operator has been notified. Article 10 (4) of the PSL covers systems using netting process and makes the provisions of article 10 (3) applicable to them. In particular, allowing transfer orders that entered the system before the system operator was notified of any legal decision, to be included in the netting process.

The PSOR has defined irrevocability as the time when the settlement accounts have been debited or credited (art 8) and this is also considered the time when the settlement is final. Article 7(3) of the PSOR further defines that the “server time” recorded in relevant timestamps as the time that will be used for recording time of entry, irrevocability and finality.

The term “transfer order” as defined in the PSL encompasses securities transfer and hence the provisions also apply to the DVP settlements involving the securities settlements in the EFT system. The Article 9.1.b of the PSOR specifies that under DVP settlement the securities transfer and the funds transfer for a securities settlement transaction would be carried out simultaneously.

Collateral rights

Article 10 (7) of the PSL preserves the right of the collateral holder (participant and operator) in a payment system to use the collateral to fulfill the obligations of the owner to the system, in the event of any notifications relating to any transactions issued under any other law (as covered in article 10(3)); article 10(5) of the PSL also specifies that any balances in fund and securities accounts of any participant impacted by the notifications, would be used primarily for settling obligations to the system. This provision ensures that the collateral placed by a participant is bankruptcy and insolvency remote.

Netting

Netting is defined in article 3(o) of the PSL. As noted earlier the provision of settlement finality also applies to systems using netting, ensuring enforceability of netting arrangements even in the event of bankruptcy or insolvency of any participant

Electronic means of initiating transactions

The PSOR, means of initiating transactions, message structure and associated aspects are elaborated in the annexes of the “Participation Contract”. These clearly describe the process of initiating and receiving a transaction. Hence the electronic means of initiating the transaction are hence considered binding. Although the CBRT is not a Certification Authority (CA) defined in the

	Electronic Signature Law 5070, based on its duties regarding the payment systems assigned by the CBRT Law, the CBRT issues and uses the digital certificates compliant with the Electronic Signature Law, limited to the CBRT services such as the CBRT Payment Systems and the Electronic Data Transfer System.
Key consideration 2	An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.
Description	<p>The PSOR constitutes the rules and procedures of the EFT system. The PSOR and detailed description of the process and technical aspects are presented as annexes to the participation contract signed by all participants. As noted earlier the article 3 of the participation contract makes the annexes an integral part of the contract.</p> <p>Copies of the participation contract and the PSOR are delivered to the participants at their application. The CBRT has the authority to make additional regulations on operational details (PSOR, Art 13).</p> <p>As per the internal procedures of the CBRT, the CBRT Executive Committee approves changes to the Rule Book. All changes are announced to all participants in advance.</p> <p>The Article 3 of the PSOR lays out the legal basis for the PSOR as deriving from article 4 of the CBRT law and article 4 and 7 of the PSL. The PSOR provisions are consistent with these provisions and further are consistent with the Article 7 of the ROPSSS. This consistency is also assessed through the payment systems oversight activities of the CBRT.</p>
Key consideration 3	An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.
Description	The Article 3 of the PSOR lays out the legal basis for the PSOR as deriving from article 4 of the CBRT law and article 4 and 7 of the PSL.
Key consideration 4	An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.
Description	<p><i>Enforceability of rules, procedures and contracts</i></p> <p>The PSOR derives its legal basis from the PSL and CBRT Law. The PSL clearly acknowledges the role of operating rules of a system. The CBRT as the operator the EFT system has an internal legal team that prepared the PSOR and vets all procedures and contracts and this is then further approved by the executive committee of the CBRT.</p> <p><i>Degree of certainty for rules and procedures</i></p> <p>Given the clear and well-founded legal basis for the PSOR and the participation contract, there is high degree of legal certainty for the rules and procedures.</p> <p>Until now there have been no adverse court rulings related to the enforceability of the operating rules and procedures of any payment and securities settlement systems.</p>

Key consideration 5	An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.
Description	<p>All the participants in the EFT system are subject to Turkish laws and regulations.</p> <p>The collaterals accepted for the liquidity support operations include some securities held in ICSDs – notably Eurobonds in Euroclear and some IILM issuances in a Malaysian CSD. The process of providing liquidity support involving these foreign securities, requires the collateral securities to be transferred to the account of the CBRT in the respective ICSDs. These transfers could be subject to conflict of law.</p>
Key conclusions	<p>The EFT functions as a RTGS system with periodic multilateral offsetting. The liquidity support provision to participants is outside of the EFT system, but is integral to the functioning of the EFT system.</p> <p>The legal basis for the EFT comprises the CBRT law, the PSL and specific regulations pertaining to operations and oversight. CBRT as the operator the PSL has developed detailed operating and procedures – the PSOR. The participants are required to sign a participation contract which binds them to the PSOR. The participation contract and the PSOR have a sound legal basis. All material legal aspects are adequately covered in the PSL and the CBRT law. All participants of the EFT system are subject to Turkish laws and regulations; and all operations are also performed in Turkey.</p> <p>The PSOR and participation contract and other related contractual aspects are vetted by the CBRT legal department and by the executive committee.</p> <p>There could be some conflict of law issues with respect to the collateralized liquidity support relating to securities held in ICSDs. The risk arises from any ruling in the jurisdiction on the ICSD having an impact on CBRT's holdings, for example if the jurisdiction does not support finality or protection of customer assets, there would be impact on CBRT. Their usage is however very limited and the securities pledged as collateral are held in the name of the CBRT, hence it is not an immediate issue of concern.</p>
Assessment of Principle 1	Observed.
Recommendations and comments	The CBRT could consider seeking external legal opinion on the enforceability of the PSOR, all contractual arrangements and also with respect to the conflict of law with respect to the securities held in the ICSDs.

PS	CSD	SSS	CCP	TR
●	●	●	●	●

Principle 2: Governance

An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.

Key consideration 1 **An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations**

Description	<p>The EFT system is operated by the CBRT. The general objectives and duties of the CBRT which is also as an overseer of the NPS, covers the EFT system.</p> <p>According to the article 4.I (f) of the CBRT Law, the fundamental duties and powers of the CBRT related with payment systems are defined as “<i>establishing securities transfer and settlement systems, oversight and regulation of the systems that are founded or to be founded to ensure smooth operation of the systems, establishing procedures and tools to be used for payments including electronic payments.</i>” The article 4.I (g) of the CBRT further assigns financial stability as a responsibility to the CBRT.</p> <p>The PSL, article 9.1 (h) also recognizes implications of payment systems on financial stability and empowers the CBRT to take necessary actions to address any adverse impact.</p> <p>The Objectives and Policies of the CBRT Regarding Payment and Securities Settlement Systems have been defined in accordance with the CBRT Law and the CBRT’s Strategic Plan and has been disclosed to the public on the CBRT web site¹⁸.</p> <p>The CBRT’s Strategic Plan for 2014-2018¹⁹, under the heading of 2.1.1. Public Area of the Main Policies Section, also explicitly recognizes the objective of the CBRT to ensure efficient, secure and effective functioning of payment systems it operates and also the overall NPS. The strategic plan is available to all the participants and the public at large, as it is published on the CBRT website.</p> <p>The CBRT carries out the following core policies and activities:</p> <ul style="list-style-type: none"> ● To make regulations to ensure the safe, uninterrupted, effective operation of payments systems and to mitigate the risks those systems may have, ● To define the methods and instruments to be used for payments, ● To make regulations for the payment system that are up-to-date and comply with international standards in order to ensure financial and monetary stability and to efficiently pursue the monetary policy, ● To oversee the systems to ensure their compliance with the national and international regulations and standards,
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¹⁸ www.tcmb.gov.tr/wps/wcm/connect/TCMB+EN/TCMB+EN/Main+Menu/PAYMENT+SYSTEMS/Objectives+and+Policies

¹⁹ www.tcmb.gov.tr/wps/wcm/connect/bc7c0720-42ba-4800-90eb-a90b2b235360/Strategic_Plan_of_the_the_CBRT_2014-2018.pdf?MOD=AJPERES

	<ul style="list-style-type: none"> • To ensure public confidence in the payment and securities settlement systems, • To continuously monitor the compliance of the systems to the PFMI in order to prevent the systemic risk that payment systems may trigger or transmit, • To monitor the developments that may affect the efficiency and safety of the systems, • To conduct the activities related with the systems in cooperation with the institutions responsible for the oversight of the financial system and system participants. <p>A division of the PSD of the CBRT is responsible for the operations of the EFT (as a part of the CBRT payment and securities settlement systems) and a separate division for its oversight. As part of the CBRT’s strategic planning and reporting procedure, each CBRT department annually establishes a performance program in order to support the aims and objectives defined in the CBRT’s strategic plan. The performance program is evaluated annually, and reported and presented to the CBRT Board.</p> <p>In addition, national and international developments and standards and participants’ requests and public opinion are taken into consideration while defining the objectives concerning the CBRT Payment Systems.</p>
Key consideration 2	An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.
Description	<p><i>Governance arrangements</i></p> <p>The CBRT’s governance structure and role and responsibilities of the bodies are determined by the CBRT Law. The law and other regulations related with governance are publicly disclosed on the CBRT web site²⁰.</p> <p>The CBRT Law defines the CBRT Board as the highest decision making body. The CBRT Board accordingly (art 22 (e)) has the authority to make the strategic decisions for payment systems, to approve the relevant directives, to define the roles of the departments and to approve the budgets needed for investment and operation.</p> <p>The CBRT law, article 30, establishes the role of the Executive Committee in the general governance of the central bank, accordingly the CBRT Executive Committee has an important role on the governance of the EFT system. Issues to be raised for decision to the CBRT Board are first evaluated by the Executive Committee. Notably, the amendments to the PSOR are approved by the Executive Committee.</p> <p>The PSD of the CBRT is responsible for establishing the CBRT Payment and Securities Settlement Systems, to operate them effectively and efficiently, to enhance them according to the predefined policies and to oversee them. These duties and responsibilities are explicitly mentioned in the Regulation on Organization and Duties of the CBRT.</p> <p>The PSD is headed by an executive Director. The Operation and oversight functions of the CBRT Payment Systems are assigned to units in two separate</p>

²⁰ www.tcmb.gov.tr/wps/wcm/connect/TCMB+EN/TCMB+EN/Bottom+Menu/About+The+Bank/Decision+Making

divisions, each of the divisions is reporting to different Deputy Executive Directors.

In January 1991, with the approval of the Governor, the Committee on Legal, Administrative and Operational Issues of the CBRT Payment Systems (HITI Committee) was founded for the studies that the CBRT carries out in the field of payment systems. In December 2013, with the decision of the Executive Committee, the HITI Committee was restructured, in which the EDs of Banking and Financial Institutions Department, Legal Department, Information Technology Department, Audit Department, Issue Department, Accounting Department, Markets Department, Payment Systems Department convene under the chairmanship of a vice governor (responsible for PSD) so that related departments views and perspectives are taken in to account for strategic decisions.

All departments account for their duties to the Executive Committee and the CBRT Board. The General Assembly reviews the annual reports presented by the CBRT Board and the Auditing Committee, and approves the financial reports.

The PSD prepares a Payment Systems Monthly Report and this is presented to the members of the CBRT Board, the Auditing Committee and the Executive Committee. In addition to that, a quarterly review of the systems is presented to the Executive Committee. These reports have detailed information on the functioning of the system, data on volume and value of payments, network analysis based on the transaction patterns, any exceptions like system downtime and any new developments.

Moreover, in order to review and evaluate the CBRT Payment and Securities Settlement Systems in the light of enhancements both in payment systems and in technology and to bring forward proposals for improvement, the CBRT Payment Systems are annually evaluated against a specific theme. The outcome of this study, including findings and suggestions for improvements, is presented to the CBRT senior management in the Periodic Evaluation Report of the CBRT Payment and Securities Settlement Systems. The last two annual reports covered business continuity planning and liquidity. These reports provide a very detailed analysis of the specific theme, study the international experience and best practices, and identify areas for improvement.

Various channels and platforms have been established to support the information exchange and cooperation between the CBRT and participants. The User Group Meetings, are held at least once a year, for a period of 1-2 days. During these meetings, the opinions of the participants on system operations and possible enhancements are taken, and information on projects and studies are shared. The working groups within the Banks Association of Turkey (BAT) also play an important role. In addition to a permanent working group within the BAT for the CBRT Payment and Securities Settlement Systems, specific working groups are formed on project basis. These working groups support the cooperation between the participants and the CBRT.

Disclosure of governance arrangements

Duties and powers of the management bodies (e.g., the CBRT Board, the Executive Committee) are defined by the CBRT Law in detail. The CBRT Law, which is the principal law in terms of governance, is publicly available²¹.

²¹ www.tcmb.gov.tr/wps/wcm/connect/TCMB+EN/TCMB+EN/Bottom+Menu/About+The+Bank/Regulations

	<p>The Regulation on Organization and Duties of the CBRT clearly defines the duties and powers of the CBRT departments including their roles related with the CBRT Payment Systems. A detailed summary of duties of the governor and the departments, which also covers the CBRT organization chart and the Regulation on Organization and Duties of the CBRT items, is publicly available on the CBRT web site²².</p> <p>In addition, the PSOR, which defines the roles, authorities and responsibilities related with the CBRT Payment Systems as well as rights and duties of the parties of the system, is available to all system participants.</p>
Key consideration 3	The roles and responsibilities of an FMI’s board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.
Description	<p><i>Roles and responsibilities of the board</i></p> <p>The powers and duties of the CBRT Board are defined in Article 22 of the CBRT Law. Apart from its other powers and duties, the CBRT Board is also empowered to take decisions related to the payment and securities settlement systems operated by the CBRT and also the NPS.</p> <p>The composition of the CBRT Board, its working methods and the required qualifications for its members are defined by Articles 19, 20 and 21 of the CBRT Law. The decision mechanism in the case of a dispute is defined by Articles 22 and 26 of the law.</p> <p>There exist various committees like the Data Security Committee and the Business Continuity Committee that have been established based on the approved arrangements of the CBRT Board, however the CBRT Board Members do not participate in them.</p> <p>As noted earlier, the HITI Committee, ensures coordination among CBRT departments on aspects related to payment systems.</p> <p><i>Review of performance</i></p> <p>The CBRT is established as a joint stock company and is subject to the provisions of private law in cases where the CBRT Law is not explicit. Therefore, as a joint stock company, the provisions of the Turkish Commercial Code (Law No.6102) shall also apply to CBRT. The Article 15 of the CBRT Law empowers the General Assembly to review and evaluate the performance of the CBRT Board and the provisions of the Turkish Commercial Code define the procedures for the review and evaluation of the performance of the CBRT Board.</p> <p>Business Continuity Committees and Information Security Committee report annually to the Executive Committee and the Board of the CBRT. The HITI Committee, on the other hand, is not a performing body, but rather a collaborative forum.</p>

²² www.tcmb.gov.tr/wps/wcm/connect/TCMB+EN/TCMB+EN/Bottom+Menu/About+The+Bank/Organizational+Structure

Key consideration 4	The board should contain suitable members with the appropriate skills and incentives to fulfill its multiple roles. This typically requires the inclusion of non-executive board member(s).
Description	<p>The EFT system (as part of the CBRT payment and securities settlement systems) is owned and operated by the CBRT, the qualifications for the CBRT Board Members are determined considering all the duties and responsibilities of the CBRT.</p> <p>The CBRT Board Members are chosen by the General Assembly of the CBRT.</p> <p>The article 19 of the CBRT Law requires the CBRT Board Members to have a university degree and to have knowledge and experience in banking, economics and finance. The Governor, who also chairs the CBRT Board, should also have the same qualifications according to article 25.</p> <p>The CBRT Board Members other than the Governor do not have a direct role on the daily management of the CBRT. In this respect, those members are non-executive board members.</p>
Key consideration 5	The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.
Description	<p><i>Roles and responsibilities of management</i></p> <p>The PSD of the CBRT is responsible for the operations and management of the EFT, under the supervision of the Executive Committee.</p> <p>The Executive Committee is composed of the Governor and four Vice Governors and is chaired by the Governor. Vice governors are appointed by a joint decree for a period of five years on the recommendation of the Governor. Vice governors may be reappointed upon the expiration of this term. The duties of the Executive Committee are defined by the Article 30 of the CBRT Law, and include, inter alia, ensuring coordination in the operations of the CBRT.</p> <p>The PSD is responsible for the daily operation of the CBRT Payment Systems. Oversight of the systems is carried out by a division of the PSD that is not responsible for the operations. Hence, operation and oversight responsibilities are segregated at the Deputy Executive Director level.</p> <p>The Regulation on the Organization and Duties of the CBRT clearly defines the roles, powers and responsibilities of CBRT departments and their executive directors. Accordingly, each executive director has duties and responsibilities to plan, to determine procedures, to organise the work, to coordinate the subsidiary divisions, to train and educate the staff and in general ensure that the activities are accomplished in a manner that is accurate, complete, on-time and in compliance with all internal rules and procedures and applicable laws and regulations.</p> <p>The CBRT departments prepare their annual performance programs, which include work plans, performance objectives and performance indicators, within the framework of their duties and responsibilities, in order to achieve the objectives that take place in the CBRT's Strategic Plan. The annual performance programs are subject to the approval of the CBRT Board before implementation.</p> <p>The performance of the departments is annually presented to the CBRT Board through performance reports. Objectives and performance indicators for the CBRT Payment Systems are included in the performance program of the CBRT Payment Systems Department and these are monitored by the CBRT Board.</p>

	<p>The objectives of the PSD for 2016 are <i>inter alia</i>:</p> <ul style="list-style-type: none"> • To maintain the business continuity via the CBRT Payment Systems in case operations are interrupted. • To manage the risks on the CBRT Payment Systems by using Risk Management Framework. • To organize training for branch employees related to the CBRT Payment Systems and give support to other trainings and workshops. • To carry out researches and business development studies for the CBRT Payment Systems • To work towards the inclusion of Turkish lira in CLS Bank (and accordingly the connection of the EFT to CLS Bank) <p>The performance indicators of the PSD for 2016 are <i>inter alia</i>:</p> <ul style="list-style-type: none"> • Number of tests on emergency cases • Number of tests on business continuity • Annual average of the CBRT Payment Systems closing time • Number of the days on which the CBRT Payment Systems' closing time was delayed • The ratio of annual transaction value of the CBRT Payment Systems to GDP • Number of research papers produced <p><i>Experience, skills and integrity</i></p> <p>The qualifications required for the Governor and the vice governors are defined by the Articles 25 and 29 of the CBRT Law.</p> <p>Executive directors of departments and directors of divisions reporting to them are appointed by the CBRT Board. Executive directors, deputy executive directors and directors are required to have at least a university degree.</p> <p>The experience required for the executive director and other positions is defined in the CBRT's Regulation on Promotion and Title Change.</p> <p>Governors and vice governors may be excused from duty through the same procedure applied for his/her appointment, only when the prohibitions stated in Article 27 of the Central Bank Law are violated and there is no longer any possibility for him/her to perform the duties entrusted by this Law.</p> <p>Executive directors and directors may be excused from duty by the CBRT Board.</p>
Key consideration 6	<p>The board should establish a clear, documented risk-management framework) that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.</p>
Description	<i>Risk management framework</i>

	<p>There is no institutional risk management framework at the overall CBRT level. However, the PSD has developed a risk management framework in 2014 with the approval of the CBRT Executive Committee, and this is being applied for the functioning of the EFT system.</p> <p>The risk management framework has also been placed to the Board as part of the annual performance program and reporting process.</p> <p>Risk Management Framework of the CBRT Payment Systems consists of an application process as well as a risk management policy document that defines principles, aim, scope, roles and responsibilities regarding risk management. In line with this policy, the implementation results are presented to the CBRT Executive Committee annually. The implementation results are also presented to the Board through annual performance program and reporting process.</p> <p>This risk management framework is elaborated in the section on Principle 3.</p> <p><i>Authority and independence of risk management and audit functions</i></p> <p>In line with the CBRT Audit Regulation, the Audit Department performs audit activities, in order to determine and evaluate the risks that may occur during the processes run by the CBRT, and to suggest risk management measures. After getting the views of the audited departments, the Audit Reports are presented to the Governor.</p> <p>The audits are carried out annually for a set of departments and functions.</p> <p>As part of this the CBRT Payment Systems Risk Management Framework and its application are also subject to audit. However there has been no audit till date of the PSD and its risk management framework, as it was developed only in 2014.</p>
<p>Key consideration 7</p>	<p>The board should ensure that the FMI’s design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.</p>
<p>Description</p>	<p><i>Identification and consideration of stakeholder interests</i></p> <p>There are several channels and platforms where system participants discuss technical and operational issues among themselves, or when necessary with the CBRT, and bring technical and operational issues to the attention of the CBRT.</p> <p>The CBRT Payment Systems Working Group within the BAT play an important role related to seeking the opinions of the participants. This group is permanent and it allows participants to discuss, evaluate and agree upon various issues among themselves. In addition to this group, specific working groups are formed within the BAT about the CBRT Payment Systems on project basis.</p> <p>When needed, the CBRT may participate in the BAT working groups. The results and proposals of the working groups are evaluated within the CBRT governance framework, and those that have been approved are put into practice.</p> <p>In addition, during User Group Meetings, which are held at least once a year, plans related with the systems are revised, current practices and changing business requirements are discussed and participant views and needs are collected.</p> <p><i>Disclosure</i></p> <p>The CBRT discloses the principle decisions about the payment systems to the participants via following channels:</p>

	<ul style="list-style-type: none"> • Official letters • Announcements to e-mail list of participants • Announcements made and documents shared on the CBRT Payment Systems User Group web site • Presentations and explanations at working group meetings • Presentations and explanations at User Group Meetings • Announcements to the public are also made through Remarks by the Governor and press releases. <p>In addition there is a the private chatroom for the EFT system, which is used at times for addressing any specific clarifications from participants related to day-to-day operations.</p>
<i>Key conclusions</i>	<p>This principle is assessed taking into account the considerations for FMIs operated by central banks as stated both in the PFMIs and in Application of the Principles for financial market infrastructures to central bank FMIs.²³</p> <p>The objectives and policies of the CBRT regarding Payment and Securities Settlement Systems place a high priority on stability, safety and efficiency. The CBRT has documented governance arrangements for the institution as a whole that define clear and direct lines of responsibility and accountability. The same governance framework has been applied for the EFT system as well, as a core responsibility of the PSD.</p> <p>There is a risk management framework for the CBRT operated payment systems. There is an existing process of periodic auditing of departmental risk management framework, however the PSD’s risk management framework has not been audited yet. The plans for the first audit of the PSD’s risk management framework are being drawn up and is expected to be completed in the coming months.</p> <p>Mechanisms exist for involving stakeholders in decision-making process, and the CBRT effectively communicates with the stakeholders through different channels.</p>
<i>Assessment of Principle 2</i>	Observed
<i>Recommendations and comments</i>	<p>The CBRT could consider including specific indicators related to efficiency and effectiveness of the EFT system and satisfaction levels of the participants, as use these to measure the performance of the EFT system. These indicators could include:</p> <ul style="list-style-type: none"> • Average wait time in queue; • Percentage of transactions processed in the last 2 hours and the first 2 hours; • Number of instances of extension of operating hours; • Turnover ratios; and • Satisfaction levels of participants.

²³ Application of the Principles for financial market infrastructures to central bank FMIs, CPMI-IOSCO, August 2015. (www.bis.org/cpmi/publ/d130.htm)

PS ●	CSD ●	SSS ●	CCP ●	TR ●
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<p>Principle 3: Framework for the comprehensive management of risks</p> <p>An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.</p>	
<p>Key consideration 1</p>	<p>An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.</p>
<p>Description</p>	<p><i>Risks that arise in or are borne by the FMI</i></p> <p>The EFT system functions as a RTGS system. The liquidity support for the EFT system is external to the EFT system and seen by the CBRT as part of the monetary policy instruments of the CBRT. For the purposes of this assessment, the risks associated with the intra-day liquidity support provision of the CBRT are also being considered.</p> <p>The risks that the EFT system is exposed to and could pose to its participants and other FMIs are:</p> <ul style="list-style-type: none"> ● Legal Risk ● Credit Risk ● Liquidity Risk ● Operational Risk ● Custody Risk <p>The EFT system as the core large value payments system in Turkey is critical to contain and limit systemic risk. As the EFT system is operated by the CBRT, the general business risks are not considered as a material risk.</p> <p><i>Risk management policies, procedures and systems</i></p> <p>The CBRT PSD has developed a risk management framework based on the ISO 31000 standard. The risk management framework was adopted in October 2014.</p> <p>The Framework comprises of an application process as well as a risk management policy document. The policy defines principles, aim, scope, roles and responsibilities regarding risk management. The application process, defines the risk management process and activities, including inputs, outputs, triggers and actions. The Risk Management Framework also includes “Risk Criteria” that define impact and probability rates and acceptable risk level.</p> <p>The Risk Management Framework is executed by the PSD. There are three roles in the framework, namely (i) Departmental Risk Management Group (DRMG), (ii) Risk Working Group (RWG) and (iii) Department Staff Assigned to Risk Management Application.</p>

The DRMG is comprised of the ED of the PSD, DEDs of the PSD responsible for the operations division and Directors of the Research and Business Development and Operations. The DRMG is responsible for providing the vision and objectives and make necessary assignments and supervises the conformance to the risk management framework. The RWG is responsible for the annual review of the framework, to keep the framework updated, and guiding and coordinating the application. Staffs are assigned from the operations division for applying the risk management framework. Other CBRT departments, system participants and service providers are also involved in the risk management process when needed.

In order to eliminate legal risks, the CBRT regulations related to the CBRT Payment and Securities Settlement Systems are issued after internal review by the legal department to ensure that it has a sound legal basis.

The EFT system works in the RTGS mode and hence there is no credit risk between participants. However as an operator the CBRT is exposed to the default of a participant in repaying the intra-day credit. This risk is contained by requiring the credit be fully collateralized with good quality collaterals with appropriate valuation and haircut practices.

In order to manage the liquidity risk, several functionalities are provided in the EFT such as queue management and full access to the account balances. Multilateral offsetting is also used in the EFT, with the offsetting algorithm running every minute, with an additional option to manually trigger offsetting if needed.

Additionally, the liquidity in the EFT system and in the market is monitored. The CBRT may provide intraday and overnight credit against collateral in order to prevent temporary liquidity shortfalls in situations that may affect the efficiency of the financial markets and also as part of its LOLR operations.

The participants can instantly monitor their balances and queued payments using the online-inquiry services. The settlement statuses and the closing times of the systems and any changes in operational aspects of participants are notified to all participants automatically by the System.

The CBRT has formed a Business Continuity Committee to carry out the activities for ensuring the continuity of key processes of the CBRT in any circumstance and for developing, testing and regularly reviewing the Business Continuity Plan (BCP) of the CBRT. The CBRT Payment Systems Business Continuity Application Plan has been developed as a part of the CBRT BCP. This also covers the EFT system. Within the CBRT Payment Systems Business Continuity Application Plan, operational risks for critical business processes have been addressed by the CBRT Payment Systems Risk Management Framework, the controls have been defined with respect to identified risks and the operational and technical procedures and documents have been prepared for recovery and resumption in case of adverse scenarios.

The collateral collected by the CBRT for liquidity support operations are held in its name in the ESTS for Turkish government securities and in ICSDs for specific securities - Turkish Government Eurobonds or IILM issuances. The CBRT does not reuse or on-lend these collaterals.

	<p><i>Review of risk management policies, procedures and systems</i></p> <p>Efficiency and effectiveness of the risk management framework are reviewed periodically and results are reported. Additionally, events that may cause deviation from standards and goals are monitored by the RWG.</p> <p>The risk management framework is required to be reviewed every year in February. The first review of the risk management framework was conducted in February 2016. In this process international standards and best practices, feedback from stakeholders, requests received from participants as part of daily operations, information requests, user satisfaction surveys and results of research studies are taken into consideration.</p> <p>The policies, procedures and systems used to identify and manage risks regarding the CBRT Payment Systems are also the subject to PSD’s oversight activities. Moreover, like all other activities of the CBRT, they are subject to audit by the CBRT Audit Department.</p>
<p>Key consideration 2</p>	<p>An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.</p>
<p>Description</p>	<p>The PSOR article 13(4) authorises the CBRT to impose sanctions on participants that fail to fulfil their obligations. Further the PSOR, section V, as part of the participant’s responsibilities outlines in detail the participants obligation to secure its systems, use appropriate internal arrangements, conform to the PSOR and have an effective business continuity plan.</p> <p>In order to eliminate risk arising from delayed payments, the CBRT is very strict with respect to the systems’ official closing times and if the working hours are extended, payments after the official closing time are charged 10 times the regular price. In 2015, there were a total of 9 extensions for a total period of 245 minutes. During these extensions, there were a total of 2,408 transactions amounting to around TRY 560 million, covering both the RPS and EFT system. Five of these extensions were made by the CBRT for money market operations, the remaining 4 were at the request of participants. The approval authority for extension requests varies based on the duration – for 15 minutes it is the operations director, beyond that and up to 1 hour it is the PSD ED and beyond that it is the Deputy Governor.</p> <p>Participants are required to inform the CBRT about problems in their systems that can affect the CBRT Payment and Securities Settlement Systems (including the EFT) as promptly as possible. Real time information sharing utilities provides participants with necessary and simultaneous information in order to help them identify and manage their risks.</p> <p>In addition, the CBRT discusses problems concerning the operations of the system with participants, shares plans on technical and operational updates, and takes opinions and change requests of the participants in User Group Meetings and working group meetings.</p> <p>Regarding the liquidity support, an unpaid intraday liquidity support is rolled over as an overnight credit which attracts interest. In addition, there is an overall borrowing limit for liquidity support facilities except the LOLR, hence limiting the borrowers’ access to other CBRT liquidity facilities.</p>

	<p>Real time information sharing utilities provides participants with necessary and simultaneous information in order to help them identify and manage their risks.</p> <p>All notifications for participants are sent automatically as part of the service management utilities in the EFT system. In this context, system statistics and details on payments are also reported to participants at the end of the day.</p> <p>In case of problems, the CBRT and participants actively use predefined chat-rooms and e-mail groups to communicate with each other.</p>
Key consideration 3	An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.
Description	<p><i>Material risks</i></p> <p>The CBRT PSD risk management framework has used the PFMIs to identify material risks and includes the following risks:</p> <ul style="list-style-type: none"> • Credit Risk • Liquidity Risk • Operational Risk • Legal Risk • Systemic Risk • General Business Risk • Custody and Investment Risk <p>The CBRT PSD considers the operational risk to be the most material risk for the EFT.</p> <p>The risk management framework and the annual review is outlined in the KC 1 of this principle is used to monitor and mitigate the risks.</p> <p>The indicators for system up time and the performance of the IT systems are collected and reported on a daily, monthly, quarterly and annual basis to the Executive Committee and the annual report is also placed to the board as part of the annual performance review of the PSD. The system up-time is also included explicitly as a performance indicator for the PSD.</p> <p>The “Sink-Rank” methodology is used for assessing the concentration and network analysis of the transaction patterns. This in particular provides a view on the liquidity risk for participants. This analysis and the analysis of effectiveness of the offsetting algorithms is included in the monthly, quarterly and annual reports.</p> <p><i>Risk management tools</i></p> <p>The CBRT PSD as part of the CBRT business continuity plan, has a very well-defined business continuity and operational risk management plan. This is the main tool used for the management of operational risk of the EFT system.</p> <p>The PSD has also instituted a survey of its participant’s BCP processes, as part of its annual thematic review report in 2014. Based on the findings of this review the PSD is now preparing complex scenarios of use in its BCP testing.</p>

Key consideration 4	An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.
Description	<p><i>Scenarios that may prevent an FMI from providing critical operations and services</i></p> <p>The PSD uses the risk management framework outlined in the KC 1 of this principles. It identified operational risk as the most material risk. Specific scenarios that may prevent it from providing critical operations and services are identified as part of the BCP process.</p> <p>Scenarios that covers all resources, physical infrastructure, labour force, information systems and communication infrastructure handles failure cases of various system components by taking into consideration the predefined business priorities.</p> <p>Please see Principle 17 (Operational Risk) for detailed discussion on this.</p> <p><i>Recovery or orderly wind-down plans</i></p> <p>The EFT is operated by the CBRT, given this the recovery and wind-down plans are not applicable, as noted in the PFMIs and the CPMI-IOSCO publication on application of PFMIs to central bank operated FMIs.</p>
Key conclusions	<p>The PSD has developed a risk management framework based on the ISO 31000 framework. The risk management framework covers the specific risks outlined in the PFMIs. The framework is reviewed annually and is also subject to audit by the CBRT audit committee.</p> <p>The PSOR provides adequate powers to the CBRT to ensure conformance to the operating and security procedures outlined in the PSOR.</p> <p>The PSD has mechanisms in place for measuring and monitoring specific aspects of liquidity risk and operational reliability of the EFT system.</p> <p>The risk management framework is however internally focused and does not explicitly take into account the dependencies on other FMIs and also internal systems of the CBRT. In particular, the operations of the EFT system has a heavy dependence on the Takasbank and the CBRT markets department, given their role in providing liquidity to participants. Takasbank is the SSS for the inter-bank markets which is a major source of the liquidity used in the EFT system. The Markets Department is the decision maker on the provision of the CBRT liquidity support facilities and also has its own systems and processes.</p> <p>This risk however is to an extent mitigated as the Takasbank and other FMIs are subject to the oversight of the CBRT and the Markets department also has its own risk management framework and there is co-ordination at the HITI committee.</p>

<i>Assessment of Principle 3</i>	Broadly Observed.
<i>Recommendations and comments</i>	The CBRT should include its dependencies on other FMIs and also the internal dependencies for the EFT system in the risk management framework for the EFT system.

PS ●	CSD	SSS ●	CCP ●	TR
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Principle 4. Credit risk

An FMI should effectively measure, monitor, and manage its credit exposure to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two largest participants and their affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions. All other CCPs should maintain, at a minimum, total financial resources sufficient to cover the default of the one participant and its affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions.

Key consideration 1

The following key consideration applies to	PS ●	CSD	SSS ●	CCP ●	TR
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An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.

Description

The EFT system functions as a RTGS system. There is no liquidity support mechanisms within the EFT system. Participants can seek liquidity support from the CBRT, subject to an overall “borrowing limit” against collaterals and from the inter-bank money markets. The liquidity support offered by the CBRT is structured as monetary policy instruments and is managed by the Markets department of the CBRT.

The markets department’s risk management framework for managing the credit risk includes establishing an overall borrowing limit based on the asset size of the participant; requiring good quality collateral; and, applying haircuts. There is no set frequency for these reviews. The last review was carried out in September 2015.

Credit risk is also acknowledged in the PSD’s risk management framework.

In addition, securities transactions (both primary and secondary market) which settle in the EFT system are performed with the DvP settlement mechanism to eliminate principal risk.

On the other side, in accordance with the Article 40.I (a) of the CBRT Law, the CBRT may provide intraday and overnight liquidity against collateral in order to prevent temporary liquidity shortfalls and technical payment problems that may affect the efficiency of the financial markets.

In this context, the CBRT performs following Money Market Operations:

- Intra-day liquidity support

	<ul style="list-style-type: none"> • Overnight Repo • Repo Auctions • Overnight credit • Lender of Last Resort <p>There is a separate collateral account in the ESTS for each of these facilities. There is a project underway to have one common pool of collaterals.</p> <p>The intra-day liquidity support facility is not charged, but there is a commission of TRY 10 per million. The rest of the facilities are interest bearing.</p> <p>There is a consolidated borrowing limit for these and these are fully collateralized. The accepted collaterals are:</p> <ul style="list-style-type: none"> - TRY denominated government securities, CBRT bills, Government Sukuks Lease certificates issued by the ALCTT; - Foreign currency deposits and foreign exchange banknotes deposits; and - Foreign currency denominated Turkish government securities – Eurobonds and Sukuks (Lease certificates issued by the ALCTT). - Foreign Government securities <p>The participants can move collateral in and out, only with the approval of the CBRT Markets Department.</p> <p>Haircuts are applied to all the collateral and the haircut varies by securities and maturity of the security.</p>												
Key consideration 2	An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.												
Description	<table border="1"> <tr> <td>The following key consideration applies to</td> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td>●</td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> </table> <p>Credit risk management framework is implemented by the CBRT markets department. The framework has identified the following sources of credit risk:</p> <ul style="list-style-type: none"> - Failure to repay credit facility availed - Drop in value of securities if the collateral needs to be enforced. <p>The risk management tools include:</p> <ul style="list-style-type: none"> - Credit facilities are fully collateralized - Accepting only good quality collateral with limited volatility - Establishing an overall borrowing limit - Mechanisms to address concentration risk - Applying haircuts - Retaining ability to call for additional collateral if there is a major change in the value of the securities placed as collaterals. 	The following key consideration applies to	PS	CSD	SSS	CCP	TR		●		●	●	
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	The credit facilities extended are monitored daily and the valuation of collaterals held are validated on a daily basis.																	
Key consideration 3	<table border="1"> <tr> <td>The following key consideration applies to</td> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td>●</td> <td></td> <td>●</td> <td></td> <td></td> </tr> </table>						The following key consideration applies to	PS	CSD	SSS	CCP	TR		●		●		
	The following key consideration applies to	PS	CSD	SSS	CCP	TR												
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	<p>A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.</p>																	
Description	<p><i>Coverage of exposures to each participant</i></p> <p>Since the EFT system functions as a RTGS system and uses DvP principle, the participants do not face any credit exposure.</p> <p>In addition, the CBRT Payment Systems are subject to the Article 10 of the Payment Systems Law. Since settlement finality is guaranteed by the law, there is no credit risk for participants that may arise from legal issues.</p> <p><i>For DNS payment systems and DNS SSSs in which there is no settlement guarantee</i></p> <p>The EFT system functions as a RTGS system, this issue is not applicable.</p>																	
Key consideration 4	<table border="1"> <tr> <td>The following key consideration applies to</td> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>●</td> <td></td> </tr> </table>						The following key consideration applies to	PS	CSD	SSS	CCP	TR					●	
	The following key consideration applies to	PS	CSD	SSS	CCP	TR												
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	<p>A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6 on margin). In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should</p>																	

	<p>include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. In all cases, a CCP should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.</p>						
<p>Description</p>	<p><i>Coverage of current and potential future exposures to each participant</i></p> <p>Not applicable as EFT is a payment system.</p> <p><i>Risk profile and systemic importance in multiple jurisdictions</i></p> <p>Not applicable as EFT is a payment system.</p> <p><i>Additional financial resources</i></p> <p>Not applicable as EFT is a payment system.</p> <p><i>Supporting rationale and governance arrangements</i></p> <p>Not applicable as EFT is a payment system.</p>						
<p>Key consideration 5</p>	<table border="1"> <tr> <td>The following key consideration applies to</td> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP ●</td> <td>TR</td> </tr> </table> <p>A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A CCP should have clear procedures to report the results of its stress tests to appropriate decision makers at the CCP and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined parameters and assumptions. On at least a monthly basis, a CCP should perform a comprehensive and thorough analysis of stress testing scenarios, models, and underlying parameters and assumptions used to ensure they are appropriate for determining the CCP’s required level of default protection in light of current and evolving market conditions. A CCP should perform this analysis of stress testing more frequently when the products cleared or markets served display high volatility, become less liquid, or when the size or concentration of positions held by a CCP’s participants increases significantly. A full validation of a CCP’s risk-management model should be performed at least annually.</p>	The following key consideration applies to	PS	CSD	SSS	CCP ●	TR
The following key consideration applies to	PS	CSD	SSS	CCP ●	TR		

Description	<p><i>Stress testing</i></p> <p>Not applicable as EFT is a payment system.</p> <p><i>Review and validation</i></p> <p>Not applicable as EFT is a payment system.</p>						
Key consideration 6	<table border="1"> <tr> <td>The following key consideration applies to</td> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> </table> <p>In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters’ positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.</p>	The following key consideration applies to	PS	CSD	SSS	CCP	TR
The following key consideration applies to	PS	CSD	SSS	CCP	TR		
Description	<p>Not applicable as EFT is a payment system.</p>						
Key consideration 7	<table border="1"> <tr> <td>The following key consideration applies to</td> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> </table> <p>An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI’s process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.</p>	The following key consideration applies to	PS	CSD	SSS	CCP	TR
The following key consideration applies to	PS	CSD	SSS	CCP	TR		
Description	<p><i>Allocation of credit losses</i></p> <p>As noted in the KC 4.1, 4.2 and 4.2 the credit extended to the participants by the CBRT is fully collateralized. In the event of any participant default the collateral rights could be enforced. As the EFT system is structured as a RTGS system, there is no credit risk between participants.</p> <p>Any loss that may stem from credit given to a participant is not shared with other participants. Any loss is covered by high quality collateral and failing bank’s other possessions held with the CBRT.</p> <p>Rules and procedures to be applied in the case of a default of a participant are described in the discussion on Principle 13.</p>						

	<p>No liquidity provider is needed since the transactions are all in TRY and the operator of the EFT system is the CBRT.</p> <p><i>Replenishment of financial resources</i></p> <p>As the central bank of issue, the CBRT always has access to necessary liquidity in TRY.</p>
Key conclusions	<p>The EFT system functions as a RTGS system it does not create credit exposures arising from its payment, clearing, and settlement processes. The credit risk related to the operation of the EFT stems from the CBRT liquidity support operations to the participants. The liquidity support operations are not integrated into the EFT system and as such are handled by the markets department. The credit risk is considered as part of the EFT risk management framework, but the full treatment of the credit risk from liquidity support operations is in the domain of the markets department.</p> <p>The markets department's credit risk management framework includes instituting overall borrowing limits, requiring all credit facilities to be collateralized with good quality securities, and applying conservative haircuts. The collaterals are re-valued daily and the CBRT has the rights to ask for additional collateral when there is an adverse movement.</p>
Assessment of Principle 4	Observed.
Recommendations and comments	The credit risk management framework of the Markets department of the CBRT should be more fully integrated in to the risk management framework of the EFT system.

PS	CSD	SSS	CCP	TR
●		●	●	

Principle 5. Collateral	
An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.	
Key consideration 1	An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.
Description	<p>The rules pertaining to the assets that can be used as collateral are determined and related activities are carried out by the Markets Department of the CBRT. These assets currently are limited to:</p> <ul style="list-style-type: none"> • Foreign currency deposits held by participants with the CBRT • Foreign currency physical notes deposited with the CBRT • Foreign government issued treasury bills and bonds only after the CBRT evaluates the maturity structure and characteristics, deposited in CBRTs accounts in ICSDs. • Central bank liquidity bills, deposited in the ESTS collateral accounts.

	<ul style="list-style-type: none"> • Government debt securities, deposited in the ESTS collateral accounts. • Turkish Treasury issued Eurobonds and sukuks, deposited in CBRT's account in ICSDs.
Key consideration 2	An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.
Description	<p><i>Valuation practices</i></p> <p>The rules for the valuation of assets that are eligible as collateral and the haircut rates are determined and applied by the CBRT Markets Department. Valuation process is repeated on a daily basis and current values are published.</p> <p><i>Haircutting practices</i></p> <p>Haircut is determined for each securities type. Haircut rates are determined according to the type and remaining term to maturity of the securities. Remaining terms shorter than one year are assessed as low risk and lower haircut rates are applied, while higher haircut rates are applied for longer remaining terms.</p>
Key consideration 3	In order to reduce the need for pro-cyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.
Description	<p>The earmarked collateral in CBRT standing facility operations is revalued on daily basis to ensure sufficient coverage. While applying haircut, CBRT lends an amount less than the market value of the collateral. The haircuts are designed to protect the CBRT against possible further falls in the value of collateral.</p> <p>CBRT applies different hair cuts for different asset classes of securities, reflecting their different risk characteristics and publishes them. CBRT may also apply haircut add-ons for a specific counterparty depending on its risk exposure.</p> <p>CBRT adopts “granular approach” that takes into consideration various characteristics of assets such as their types, maturities, liquidity conditions, currencies and their performance through the cycle and particularly in stressed market conditions. In this context, the haircut schedule reflects the information gained about the performance of different asset classes over time and particularly in stressed conditions observed during the crises.</p> <p>It is also important to note that the authority to determine the haircut ratios and to apply haircut add-ons specific to a particular counterparty was delegated to Governor by the Board in order to accelerate the decision process when it is needed. There is no established schedule for review of haircut related policies; the last review was in September 2015.</p>

Key consideration 4	An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.
Description	<p>The rules for the prevention of collateral concentration on certain assets are determined and applied by the CBRT Markets Department.</p> <p>At least 30% of the securities by value held as collateral must be government debt securities.</p>
Key consideration 5	An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.
Description	<p>The CBRT Markets Department accepts Turkish Government issued securities denominated in foreign currency – Eurobonds and sukuk. The CBRT Markets Department after detailed analysis accepts some foreign government securities.</p> <p>Participants are required to transfer securities of these types to the CBRTs account in the foreign ICSD – currently only Euroclear.</p> <p>This ensures that the CBRT is fully in possession of the collateral and can use them in a timely manner to cover any default.</p> <p>The EFT system supports only transactions in TRY. The CBRT as a central bank of issue, is not constrained in TRY liquidity and hence need not necessarily liquidate the collateral right away.</p>
Key consideration 6	An FMI should use a collateral management system that is well-designed and operationally flexible.
Description	<p><i>Collateral management system design</i></p> <p>The CBRT uses a collateral management system focused on the type of the asset and the maturity of the asset. The credit amount that a bank can receive from all of the CBRT’s market operations is limited by an overall borrowing limit that is determined by the size of its assets.</p> <p>The discount rate are determined by asset’s type and maturity date.</p> <p>List of eligible securities can be updated if it is needed.</p> <p><i>Operational flexibility</i></p> <p>The participants can move in collateral to the collateral account and move out collateral at any time, subject to CBRT approval. The process is automated however there is a manual approval process. The CBRT markets department is appropriately staffed to allow for a quick turnaround for the approvals during the operating hours of the EFT system.</p>
Key conclusions	The collateral management system and processes are external to the EFT system and are managed by the CBRT markets department. The extension of liquidity support is considered a monetary policy instrument. The choice

	<p>of securities, haircut rates, valuation practices and operational arrangements are an integral part of the CBRT monetary policy operations.</p> <p>The CBRT maintains a list of eligible securities and their haircut rates. The haircut rates depend on the type and the maturity of the securities. The eligible securities are TRY government bonds, central bank bills, lease certificates issued by ALCTT (Asset leasing company of the Turkish Treasury), foreign bonds and notes, IILM issuances and foreign exchange deposits and foreign exchange banknotes deposits.</p> <p>There is no scheduled calendar for review of haircut rates. The policy for haircut rates takes into account measures to avoid procyclical adjustments. Also, as a central bank of issue, the CBRT has ability to smooth any changes required in haircut rates.</p> <p>The participants can move collateral in and out efficiently but needs an approval of the CBRT. The CBRT has ensured that it is resourced appropriately to accord necessary approval in a timely manner.</p>
Assessment of Principle 5	Observed.
Recommendations and comments	The CBRT should establish a schedule for ongoing review of haircut rates.

PS	CSD	SSS	CCP	TR
			●	

Principle 6. Margin	
A CCP should cover its exposure to its participants for all products through an effective margin system that is risk-based and regularly reviewed.	
Key consideration 1	A CCP should have a margin system that establishes margin levels commensurate with the risks and particular attributes of each product, portfolio, and market it serves.
Description	<p><i>Description of margin methodology</i></p> <p>The EFT system is a payment system and this KC and principle are not applicable.</p> <p><i>Credit exposures</i></p> <p>The EFT system is a payment system and this KC and principle are not applicable.</p> <p><i>Operational components</i></p> <p>The EFT system is a payment system and this KC and principle are not applicable.</p>

Key consideration 2	A CCP should have a reliable source of timely price data for its margin system. A CCP should also have procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.
Description	<p><i>Sources of price data</i></p> <p>The EFT system is a payment system and this KC and principle are not applicable.</p> <p><i>Estimation of prices</i></p> <p>The EFT system is a payment system and this KC and principle are not applicable.</p>
Key consideration 3	<p>A CCP should adopt initial margin models and parameters that are risk-based and generate margin requirements sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default. Initial margin should meet an established single-tailed confidence level of at least 99 percent with respect to the estimated distribution of future exposure. For a CCP that calculates margin at the portfolio level, this requirement applies to each portfolio’s distribution of future exposure. For a CCP that calculates margin at more-granular levels, such as at the sub-portfolio level or by product, the requirement must be met for the corresponding distributions of future exposure. The model should (a) use a conservative estimate of the time horizons for the effective hedging or close out of the particular types of products cleared by the CCP (including in stressed market conditions), (b) have an appropriate method for measuring credit exposure that accounts for relevant product risk factors and portfolio effects across products, and (c) to the extent practicable and prudent, limit the need for destabilising, procyclical changes.</p>
Description	<p><i>Initial margin model</i></p> <p>The EFT system is a payment system and this KC and principle are not applicable.</p> <p><i>Closeout and sample periods</i></p> <p>The EFT system is a payment system and this KC and principle are not applicable.</p> <p><i>Procyclicality and specific wrong-way risk</i></p> <p>The EFT system is a payment system and this KC and principle are not applicable.</p>

Key consideration 4	A CCP should mark participant positions to market and collect variation margin at least daily to limit the build-up of current exposures. A CCP should have the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants.
Description	The EFT system is a payment system and this KC and principle are not applicable.
Key consideration 5	In calculating margin requirements, a CCP may allow offsets or reductions in required margin across products that it clears or between products that it and another CCP clear, if the risk of one product is significantly and reliably correlated with the risk of the other product. Where two or more CCPs are authorised to offer cross-margining, they must have appropriate safeguards and harmonised overall risk-management systems.
Description	<p><i>Portfolio margining</i></p> <p>The EFT system is a payment system and this KC and principle are not applicable.</p> <p><i>Cross-margining</i></p> <p>The EFT system is a payment system and this KC and principle are not applicable.</p> <p><i>Robustness of methodologies</i></p> <p>The EFT system is a payment system and this KC and principle are not applicable.</p>
Key consideration 6	A CCP should analyse and monitor its model performance and overall margin coverage by conducting rigorous daily backtesting – and at least monthly, and more-frequent where appropriate, sensitivity analysis. A CCP should regularly conduct an assessment of the theoretical and empirical properties of its margin model for all products it clears. In conducting sensitivity analysis of the model’s coverage, a CCP should take into account a wide range of parameters and assumptions that reflect possible market conditions, including the most-volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices.
Description	<p><i>Backtesting and sensitivity analysis</i></p> <p>The EFT system is a payment system and this KC and principle are not applicable.</p> <p><i>Margin model performance</i></p>

	The EFT system is a payment system and this KC and principle are not applicable.
Key consideration 7	A CCP should regularly review and validate its margin system.
Description	The EFT system is a payment system and this KC and principle are not applicable.
Key conclusions	The EFT system is a payment system and this KC and principle are not applicable.
Assessment of Principle 6	Not Applicable
Recommendations and comments	

PS ●	CS D	SSS ●	CCP ●	TR
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Principle 7: Liquidity risk

An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.

Key consideration 1

PS ●	CSD	SSS ●	CCP ●	TR
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An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.

Description

The CBRT as the operator of the EFT system itself is not exposed to any liquidity risk as the EFT is structured as a RTGS system and there are no overdrafts allowed. The CBRT liquidity support to the participants is in TRY and the central bank of issue, it is not constrained in access to TRY liquidity.

The EFT participants have full access to their queue and can set priority for transfer orders and change them as needed for queued transactions.

There is a multilateral offsetting in the EFT system every minute.

The participants are able to use the reserves held with the CBRT for meeting liquidity needs in the EFT system. The reserve maintenance period is 14 days. There are no specific minimum balances required at the end of a day, the only requirement is to ensure that the average balance across the 14 day period is met.

The CBRT as the operator provides liquidity support as part of its monetary policy operations and these could be used by the participants for meeting its liquidity needs in the EFT system.

The participants also can secure liquidity in the inter-bank money markets operated by the Borsa Istanbul (BIST) and Takasbank. The CBRT is an active participant and quotes its lending and borrowing rate at the BIST inter-bank money market to maintain the interest rates in a pre-defined corridor.

These markets settle in the Takasbank at 4.30 PM. The participants can bring this liquidity into the EFT system quickly as the Takasbank is also a participant in the EFT system.

In addition the participants have access to the Takasbank cash credit facility and also any credit lines agreed with other participants.

	<p>The transaction pattern in the EFT system shows a marked skew towards transactions settling post 3 PM, with around 60% of transactions being settled post 3 PM and around 35% post 4 PM.</p> <p>There is a marked trend of settlements being bunched closer to the end of the day, with over 60% of the transactions settling post 2 PM and 35% post 4 PM. The CBRT has studied this topic as part of its 2015 annual review and is currently evaluating potential options. The analysis had concluded that there are a few structural reasons for the concentration of payments towards the closing period: large in flow of settlements of the TRY leg of correspondent banking transactions and that the ILF is unattractive hence the reliance on using the inter-bank money markets which settle at 4 PM.</p>										
Key consideration 2	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td>●</td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> </table> <p>An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.</p>	PS	CSD	SSS	CCP	TR	●		●	●	
PS	CSD	SSS	CCP	TR							
●		●	●								
Description	<p>The participants have access to queue management tools, access to account balances all through the day and liquidity support tools provided by the CBRT and also those available in the interbank money markets.</p> <p>The CBRT in addition monitors and produces daily reports on the liquidity position in the EFT system covering the source of liquidity, the amount of liquidity available in the system, and the distribution of the liquidity among participants hour by hour.</p> <p>The BRSA, is establishing a framework for monitoring liquidity of banks in accordance with the BIS publication - “Monitoring metrics for intraday liquidity risk management”. Once this framework has been adopted the liquidity related analysis are also intended to be shared with the Markets Department of the CBRT.</p>										
Key consideration 3	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td>●</td> <td></td> <td>●</td> <td></td> <td></td> </tr> </table> <p>A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.</p>	PS	CSD	SSS	CCP	TR	●		●		
PS	CSD	SSS	CCP	TR							
●		●									
Description	<p>The EFT system functions as a RTGS system and no overdrafts are allowed. The CBRT as the central bank provides liquidity support tools for participants</p>										

	<p>in the EFT system. As the CBRT is the central bank of issue it is not constrained in TRY liquidity.</p> <p>As a policy the CBRT has established an overall borrowing limit for each participant and the liquidity support is collateralized. The participants also have access to liquidity through the inter-bank money markets which again are collateralized. Thus the participant's access to liquidity, except for any credit lines with other participants, is capped at the amount of collateral they can bring and with respect to the CBRT liquidity support also by the overall borrowing limit.</p>										
<p>Key consideration 4</p>	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td></td> <td></td> <td>●</td> <td></td> </tr> </table> <p>A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments, and meet other payment obligations on time with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions.</p>	PS	CSD	SSS	CCP	TR				●	
PS	CSD	SSS	CCP	TR							
			●								
<p>Description</p>	<p><i>Sufficient liquid resources</i></p> <p>The EFT is a payment system and hence this KC is not applicable.</p> <p><i>Risk profile and systemic importance in multiple jurisdictions</i></p> <p>The EFT is a payment system and hence this KC is not applicable.</p>										

Key consideration 5	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td>●</td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> </table> <p> For the purpose of meeting its minimum liquid resource requirement, an FMI’s qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed. </p>	PS	CSD	SSS	CCP	TR	●		●	●	
PS	CSD	SSS	CCP	TR							
●		●	●								
Description	<p> <i>Size and composition of qualifying liquid resources & Availability and coverage of qualifying liquid resources</i> </p> <p> The CBRT as the operator of the EFT system is not constrained in TRY liquidity, by virtue of it being the central bank of issue. The constraint on providing liquidity to a participant as elaborated in KC 3 however is based on the overall borrowing limit established for a participant and the collateral they can bring. </p>										
Key consideration 6	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td>●</td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> </table> <p> An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as a part of its liquidity plan. </p>	PS	CSD	SSS	CCP	TR	●		●	●	
PS	CSD	SSS	CCP	TR							
●		●	●								
Description	<p> <i>Size and composition of supplemental liquid resources</i> </p> <p> As noted the CBRT as the central bank of issue is not constrained in TRY liquidity. </p> <p> <i>Availability of supplemental liquid resources</i> </p>										

	As noted the CBRT as the central bank of issue is not constrained in TRY liquidity.										
Key consideration 7	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td>●</td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> </table> <p>An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider’s performance reliability with respect to a particular currency, a liquidity provider’s potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.</p>	PS	CSD	SSS	CCP	TR	●		●	●	
PS	CSD	SSS	CCP	TR							
●		●	●								
Description	<p><i>Use of liquidity providers</i></p> <p>As noted in the KC 5, the CBRT as the operator the EFT system intervenes to provide liquidity support only in TRY and as the central bank of issue, it is not constrained. The CBRT is not reliant on any other institution for providing the needed liquidity.</p> <p><i>Reliability of liquidity providers</i></p> <p>As noted in the KC 5, the CBRT as the operator the EFT system intervenes to provide liquidity support only in TRY and as the central bank of issue, it is not constrained. The CBRT is not reliant on any other institution for providing the needed liquidity.</p>										
Key consideration 8	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td>●</td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> </table> <p>An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.</p>	PS	CSD	SSS	CCP	TR	●		●	●	
PS	CSD	SSS	CCP	TR							
●		●	●								
Description	<p>The EFT system is operated by the CBRT and the CBRT provides liquidity support to the participants of the EFT system as part of its monetary policy operations, subject to an overall borrowing limit and availability of the required collateral.</p> <p>The participants, additionally, have access to the inter-bank money markets.</p>										
Key consideration 9	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td>●</td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> </table>	PS	CSD	SSS	CCP	TR	●		●	●	
PS	CSD	SSS	CCP	TR							
●		●	●								

	<p>An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.</p>										
<p>Description</p>	<p>The CBRT as the central bank of issue is not constrained in TRY and as such does not require any tests to verify its adequacy of resources to provide required liquidity. However the operational aspects related to liquidity provision and also ability of participants to conform to the collateral requirements need attention.</p> <p><i>Stress test programme</i></p> <p>The CBRT does not have any explicit stress test programme.</p> <p><i>Stress test scenarios</i></p> <p>The CBRT does not have any explicit stress test programme.</p> <p><i>Review and validation</i></p> <p>As part of the risk management framework for the CBRT markets department, there is a practice of review of the liquidity support tools. However there is no structured periodic review process.</p>										
<p>Key consideration 10</p>	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td>●</td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> </table> <p>An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding,</p>	PS	CSD	SSS	CCP	TR	●		●	●	
PS	CSD	SSS	CCP	TR							
●		●	●								

	<p>revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.</p>
Description	<p><i>Same day settlement</i></p> <p>The EFT system is structured as a RTGS system. Unsettled transactions are cancelled at the end of the day. The EFT system is structured as a V topology and the receiving participant does not have visibility into incoming transfer orders. The participants have access to liquidity support from the CBRT and the inter-bank money markets.</p> <p><i>Replenishment of liquidity resources</i></p> <p>The EFT system is operated by the CBRT. The CBRT as part of its monetary policy operations can extend liquidity support to the participants, however as a central bank of issue, it is not constrained in its liquidity.</p>
Key Conclusions	<p>The CBRT as the operator of the EFT system itself is not exposed to any liquidity risk as the EFT is structured as a RTGS system and there are no overdrafts allowed. The EFT system is structured as a RTGS system. Unsettled transactions are cancelled at the end of the day.</p> <p>The CBRT as the operator of the EFT system, by itself is not constrained in TRY liquidity. However the participants could face liquidity shortages. The participants have access to liquidity support from the CBRT and the inter-bank money markets. These liquidity options are collateralized and in the case of the intraday and overnight CBRT liquidity support there is an overall borrowing limit for the participant. However, liquidity support is available without any limit within the framework of LOLR.</p> <p>The CBRT as the central bank of issue is not constrained in TRY and as such does not require any tests to verify its adequacy of resources to provide required liquidity. However the operational aspects related to liquidity provision and also ability of participants to conform to the collateral requirements need attention. The operational aspects are in the scope of the operational risk management and covered in principle 17. The availability of adequate collateral, however will need attention. In this regard, there is an ongoing review of the policy framework relating to the CBRT intraday liquidity support. There is however no set time-period for this.</p> <p>The transaction pattern in the EFT system shows existence of substantial liquidity risk for the participants. The CBRT has studied this and is currently evaluating suitable options.</p>
Assessment of Principle 7	Broadly Observed.
Recommendations and comments	<p>The risk management framework of the EFT system could consider daily and periodic analysis of the liquidity risk jointly by the PSD and Markets departments of the CBRT. There could be additional indicators like estimate of participant's liquidity available both from the CBRT and also the inter-bank money markets. This could build on the framework being established by the BRSA on liquidity risk.</p>

	<p>The CBRT could consider encouraging earlier settlements in the inter-bank money markets to allow for more liquidity to flow into the EFT system earlier.</p> <p>The CBRT as part of the ongoing review of its current policy on liquidity risk, analyze options to make intra-day liquidity support by the CBRT more attractive to the participants and implement suitable options.</p> <p>The CBRT could evaluate if pricing policies could incentivize earlier settlement perhaps as part of overall throughput guidelines.</p>
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PS ●	CSD	SSS ●	CCP ●	TR
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<p>Principle 8: Settlement finality</p> <p>An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time</p>	
Key consideration 1	An FMI’s rules and procedures should clearly define the point at which settlement is final.
Description	<p><i>Point of settlement finality</i></p> <p>The Article 10 of the PSL establishes settlement finality and irrevocability for systems designated by the CBRT (Art 11). The CBRT has designated the EFT, RPS and the ESTS in the official gazette and accordingly the provisions of article 10 of the PSL covers the EFT system.</p> <p>Article 10(1) of the PSL uses the term “transfer order”, requires the point of time when a transaction become irrevocable, the time of entry and time when a settlement of a transfer order is final, to be defined in the operating rules of the system. Article 10(3) of the PSL further elaborates that any decisions taken under any other law regarding any transaction orders, would be valid only for transactions that enter the system after the system operator has been notified. Article 10 (4) of the PSL covers systems using netting process and makes the provisions of article 10 (3) allow transaction orders that entered the system before the system operator was notified of any legal decision, to be included in the netting process.</p> <p>The PSOR has defined irrevocability as the time when the settlement accounts have been debited or credited (art 8) and this is also considered the time when the settlement is final. Article 7(3) of the PSOR further defines that the “server time” recorded in relevant timestamps as the time that will be used for recording time of entry, irrevocability and finality.</p> <p>The term “transfer order” as defined in the PSL encompasses securities transfer and hence the provisions also apply to the DVP settlements involving the securities settlements in the EFT system. The Article 9.1.b of the PSOR specifies that under DVP settlement the securities transfer and the funds transfer for a securities settlement transaction would be carried out simultaneously.</p>

	<p>The PSL is available on the CBRT website and also in gazette. The PSOR is available to the participants and also as part of the application process to the banks that apply to become a participant.</p> <p><i>Finality in the case of links</i></p> <p>The EFT system is a payment system and as such there are no links.</p>
Key consideration 2	An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.
Description	<p><i>Final settlement on the value date</i></p> <p>The EFT system is structured as a RTGS system and all settlements are final as noted in the KC 1.</p> <p><i>Intraday or real-time final settlement</i></p> <p>Transfer orders are settled only on their value date as and when funds are available in the senders settlement account and orders for future value dates are not accepted. As such, EFT provides intraday settlement in real time provided funds are available in the senders account with CBRT.</p> <p>Participants can track the status of their operations in real-time through reporting facilities provided by the system.</p>
Key consideration 3	An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.
Description	<p>In the EFT system, it is possible to cancel transfer orders before they are settled. However, a settled transaction cannot be cancelled or revoked. This is stated in the Article 8 of the PSOR.</p> <p>In EFT, participants can get detailed and summary reports on queued payments and can cancel unsettled queued payments. At the end of the business day, all payments in queues are cancelled automatically.</p> <p>The EFT systems does not provide information to the receiver party about incoming payments before the payment is settled, payment cancellations from queues are transparent to the receiver.</p> <p>Participants can request for extension of operating hours on a particular day. Extensions request are made on phone and extensions granted are communicated to all participants. Extensions up to 15 minutes are to be authorized by the EFT operations head, beyond 15 minutes and up to 1 hour requires the approval of the ED of the PSD. Extensions beyond that require approval of a Deputy Governor of the CBRT.</p>

Key conclusions	The EFT functions as a RTGS system with final settlement through the day. Settlement finality is protected in the PSL and clearly articulated in the PSOR and as such has a sound legal basis.
Assessment of Principle 8	Observed.
Recommendations and comments	

PS ●	CSD	SSS ●	CCP ●	TR
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Principle 9: Money settlements	
An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimize and strictly control the credit and liquidity risk arising from the use of commercial bank money.	
Key consideration 1	An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.
Description	The EFT system settles in the books of the CBRT and as such uses central bank money.
Key consideration 2	If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.
Description	The EFT system settles in the books of the CBRT and as such uses central bank money.
Key consideration 3	If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.
Description	The EFT system settles in the books of the CBRT and as such uses central bank money.
Key consideration 4	If an FMI conducts money settlements on its own books, it should minimize and strictly control its credit and liquidity risks.
Description	The EFT system settles in the books of the CBRT and as such uses central bank money.
Key consideration 5	An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement

	banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.
Description	The EFT system settles in the books of the CBRT and as such uses central bank money.
Key conclusions	The EFT system settles in the books of the CBRT and as such uses central bank money.
Assessment of Principle 9	Observed.
Recommendations and comments	

PS	CSD	SSS	CCP	TR
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Principle 10: Physical Deliveries	
An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.	
Key consideration 1	An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.
Description	The EFT is a payment system and hence this KC and principle are not applicable.
Key consideration 2	An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.
Description	The EFT is a payment system and hence this KC and principle are not applicable.
Key conclusions	The EFT is a payment system and hence this principle is not applicable.
Assessment of Principle 10	Not Applicable
Recommendations and comments	

PS	CSD •	SSS	CCP	TR
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Principle 11: Central Securities Depositories

A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.

Key consideration 1	A CSD should have appropriate rules, procedures, and controls, including robust accounting practices, to safeguard the rights of securities issuers and holders, prevent the unauthorised creation or deletion of securities, and conduct periodic and at least daily reconciliation of securities issues it maintains.
Description	<p><i>Safeguarding the rights of securities issuers and holders</i></p> <p>The EFT is a payment system and hence this KC and principle are not applicable.</p> <p><i>Prevention of the unauthorised creation or deletion of securities</i></p> <p>The EFT is a payment system and hence this KC and principle are not applicable.</p> <p><i>Periodic reconciliation of securities issues</i></p> <p>The EFT is a payment system and hence this KC and principle are not applicable.</p>
Key consideration 2	A CSD should prohibit overdrafts and debit balances in securities accounts.
Description	The EFT is a payment system and hence this KC and principle are not applicable.
Key consideration 3	A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry. Where appropriate, a CSD should provide incentives to immobilise or dematerialise securities.
Description	The EFT is a payment system and hence this KC and principle are not applicable.
Key consideration 4	A CSD should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.
Description	The EFT is a payment system and hence this KC and principle are not applicable.
Key consideration 5	A CSD should employ a robust system that ensures segregation between the CSD's own assets and the securities of its

	participants and segregation among the securities of participants. Where supported by the legal framework, the CSD should also support operationally the segregation of securities belonging to a participant's customers on the participant's books and facilitate the transfer of customer holdings.
Description	The EFT is a payment system and hence this KC and principle are not applicable.
Key consideration 6	A CSD should identify, measure, monitor, and manage its risks from other activities that it may perform; additional tools may be necessary in order to address these risks.
Description	The EFT is a payment system and hence this KC and principle are not applicable.
Key conclusions	The EFT is a payment system and hence this principle is not applicable.
Assessment of Principle 11	Not Applicable.
Recommendations and comments	

PS	CSD	SSS	CCP	TR
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Principle 12: Exchange-of-value settlement systems	
If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.	
Key consideration 1	An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.
Description	<p>The EFT system is a payment system settling transfer order denominated only in TRY. The EFT system is used for settling the securities settlement transactions in a DVP mode, however the ESTS functions as the SSS for that. This principle is hence addressed as part of the ESTS assessment.</p> <p>The EFT system is used for the TRY leg of foreign exchange transactions, however these are structured as two separate transactions and as such there is no PVP arrangement to link the two legs.</p>
Key conclusions	The EFT system does perform exchange-of-value settlement. The EFT system is used for DVP settlements by the ESTS. There is no PVP for foreign exchange transactions, with the TRY leg settling independently of the foreign exchange leg, with the TRY denominated transfer orders being settled in RTGS mode.

Assessment of Principle 12	Not Applicable.
Recommendations and comments	

PS ●	CSD ●	SSS ●	CCP ●	TR
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Principle 13: Participant-default rules and procedures	
An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.	
Key consideration 1	An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.
Description	<p><i>Participant default rules and procedures</i></p> <p>The EFT system functions as a RTGS system and no overdrafts are allowed. The article 13(7) of the PSOR defines default as resulting from insolvency of the participant or failure to settle its dues with the CBRT – which could be either repayment of the credit availed through the liquidity support operations of the CBRT or any fees due to the CBRT. The article also further notes that in the event of default or other circumstances including bankruptcy, termination of operations, merger or any other technical or operational issues, the CBRT can use the participants assets in the EFT, RPS or ESTS system to collect the amount owed to the CBRT.</p> <p>Article 13(8) of the PSOR lists the actions that the CBRT could take on participants who have defaulted or those facing operational or technical issues:</p> <ul style="list-style-type: none"> ● Suspend the money settlement temporarily. ● Suspend a participant temporarily. In this case, participant’s settlement accounts are closed for operation and the messages sent by and to the participant are automatically rejected. ● Use corrective direct debit operation to transfer funds and securities between participants’ settlement accounts. ● Transfer balances of participant’s settlement accounts outside the system in order to keep them in blocked accounts. <p><i>Use of financial resources</i></p> <p>The EFT system is structured as a RTGS system, participants themselves bear no credit risk amongst them. The CBRT is exposed to the default of a participant to the extent the collateral posted by the defaulting participant does not cover the liquidity facility availed by the participant.</p>

	<p>This however is considered outside the system as the liquidity facility provided is treated as a monetary policy operation.</p> <p>Nevertheless the PSOR, as noted above, allows the CBRT to access all of the participant's assets in the system including the collateral posted to cover its loss. This provision in the PSOR has a sound legal basis deriving from article 10(5) of the PSL.</p> <p>The CBRT may provide intraday and overnight liquidity to other participants in order to prevent liquidity shortfalls arising from a participants default.</p>
Key consideration 2	An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.
Description	<p>The PSD has developed a default management procedure for the RPS, EFT and ESTS in one integrated document. The document outlines the process to be followed in various scenarios. This document was adopted after endorsement by the management on the 21st December 2015.</p> <p>Operations start upon receiving the written notification from the CBRT Legal Department and are conducted in accordance with the PSL, PSOR and applicable regulations.</p> <p>Additionally, in case of a default of a participant, operations to be performed in the CBRT Payment Systems are documented, including the co-ordination with other relevant departments of the CBRT.</p>
Key consideration 3	An FMI should publicly disclose key aspects of its default rules and procedures.
Description	<p>The default management processes are outlined in the PSOR, article 13. The PSOR is available to all participants.</p>
Key consideration 4	An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.
Description	<p>The default procedure was developed taking into account past experience in handling defaults of participants in the early 2000's. This process however is not tested in its entirety. Specific elements are included in the business continuity operations and on an ongoing basis – for example the online communications tools available in the EFT system.</p>
Key conclusions	<p>The PSD has developed a default management procedure recently covering all the payment and securities settlement systems operated by the CBRT.</p> <p>The default procedure is consistent with the provisions in the PSOR and derives its legal basis from the PSL.</p> <p>Given that the procedure was adopted very recently it has not been tested in its entirety.</p> <p>The participants in the system are all banks, except the MKK. Banks are supervised by the BRSA and the MKK by the CMB. These authorities</p>

	<p>have the sole right related to insolvency or bankruptcy of these participants. There are existing co-ordination and information sharing arrangements between the CBRT, BRSA and the CMB.</p> <p>Hence there is high degree of certainty that the CBRT will have adequate notice to execute its default management process. Nevertheless, any delays in executing the default management process, could escalate the risks in the system.</p>
Assessment of Principle 13	Broadly Observed
Recommendations and comments	<p>The CBRT should conduct periodic testing of the default management procedure as a whole and include the participants also in this exercise. This could be integrated with the BCP or conducted as a standalone exercise at least once a year.</p> <p>The CBRT could consider as part of publication of the PFMI assessments or the disclosure framework make available key details of the PSOR and default procedures publically.</p>

PS	CSD	SSS	CCP	TR
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Principle 14. Segregation and Portability	
A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.	
Key consideration 1	A CCP should, at a minimum, have segregation and portability arrangements that effectively protect a participant's customers' positions and related collateral from the default or insolvency of that participant. If the CCP additionally offers protection of such customer positions and collateral against the concurrent default of the participant and a fellow customer, the CCP should take steps to ensure that such protection is effective.
Description	<p><i>Customer protection from participant default</i></p> <p>The EFT system is a payment system and hence this principle and KC are not applicable.</p> <p><i>Customer protection from participant and fellow customer default</i></p> <p>The EFT system is a payment system and hence this principle and KC are not applicable.</p> <p><i>Legal basis</i></p> <p>The EFT system is a payment system and hence this principle and KC are not applicable.</p>

Key consideration 2	A CCP should employ an account structure that enables it readily to identify positions of a participant’s customers and to segregate related collateral. A CCP should maintain customer positions and collateral in individual customer accounts or in omnibus customer accounts.
Description	The EFT system is a payment system and hence this principle and KC are not applicable.
Key consideration 3	A CCP should structure its portability arrangements in a way that makes it highly likely that the positions and collateral of a defaulting participant’s customers will be transferred to one or more other participants.
Description	The EFT system is a payment system and hence this principle and KC are not applicable.
Key consideration 4	A CCP should disclose its rules, policies, and procedures relating to the segregation and portability of a participant’s customers’ positions and related collateral. In particular, the CCP should disclose whether customer collateral is protected on an individual or omnibus basis. In addition, a CCP should disclose any constraints, such as legal or operational constraints, that may impair its ability to segregate or port a participant’s customers’ positions and related collateral.
Description	The EFT system is a payment system and hence this principle and KC are not applicable.
Key conclusions	The EFT system is a payment system and hence this principle is not applicable.
Assessment of Principle 14	Not Applicable
Recommendations and comments	

PS	CSD	SSS	CCP	TR
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Principle 15: General business risk

An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialize. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

Key consideration 1	An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.
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Description	<p>In the EFT system, all risks including general business risk are managed within the CBRT Payment Systems Risk Management Framework. General business risk has been considered to be low since the owner and operator of the EFT is the CBRT, and no important risks have been identified in this context.</p> <p>All expenses related with the systems are managed within the bank's general budget. Budgeting and accounting procedures are controlled by the CBRT Accounting Department and subject to audit by the CBRT Audit Department. The results are also controlled by the management of the CBRT.</p> <p>The pricing model of the EFT system is structured to fully recover investment and operating expenses related to hardware and software of the CBRT Payment Systems and personnel costs.</p> <p>The pricing model for the EFT operations is based on the amount of the payment to be transferred. The current tariff structure is as follows:</p> <ul style="list-style-type: none"> - Fixed fees of TRY 0.20 (min. fee) and TRY 20.80 (max. fee) are charged for the payments with amounts below a lower limit (TRY 8,000); and, above an upper limit (TRY 832,000), respectively. - The fee varies for the payments with an amount between those limits (i.e., between TRY 8,000 and TRY 832,000) and it is calculated by multiplying its value with a constant ratio (0.000025). <p>The limits and their corresponding fees are determined each year and announced to the participants by the CBRT.</p>
Key consideration 2	<p>An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.</p>
Description	<p>The EFT system is owned and operated by the CBRT. This key consideration is not applicable, as stated in the Application of the Principles for financial market infrastructures to central bank FMIs.</p>
Key consideration 3	<p>An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.</p>
Description	<p><i>Recovery or orderly wind-down plan</i></p>

	<p>The EFT system is owned and operated by the CBRT. This key consideration is not applicable, as stated in the Application of the Principles for financial market infrastructures to central bank FMIs.</p> <p><i>Resources</i></p> <p>The EFT system is owned and operated by the CBRT. This key consideration is not applicable, as stated in the Application of the Principles for financial market infrastructures to central bank FMIs.</p>
Key consideration 4	Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.
Description	The EFT system is owned and operated by the CBRT. This key consideration is not applicable, as stated in the Application of the Principles for financial market infrastructures to central bank FMIs.
Key consideration 5	An FMI should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.
Description	The EFT system is owned and operated by the CBRT. This key consideration is not applicable, as stated in the Application of the Principles for financial market infrastructures to central bank FMIs.
Key conclusions	<p>The EFT is a central bank operated FMI, as such several KCs related to liquid assets, wind down plans and viable plan for raising additional capital are not applicable.</p> <p>The pricing policy for the EFT system aims for a full investment and operational expenses recovery. The pricing structure is clear and communicated to the participants. The fees are recovered on a monthly basis and the corresponding information is available to participants. The costs of the EFT system are covered under the general budget of the CBRT and subject to the standard audit process.</p>
Assessment of Principle 15	Observed.
Recommendations and comments	

PS	CSD	SSS	CCP	TR
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Principle 16. Custody and Investment Risks	
An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.	
Key consideration 1	An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.
Description	

	<p>The settlement accounts of the participants are held at the CBRT. The TRY denominated government securities collateral placed for CBRT liquidity support are held at the ESTS – owned and operated by the CBRT. The foreign currency denominated Turkish and foreign government securities placed as collateral are held in the name of the CBRT in ICSDs. The foreign currency funds used as collateral are again held in the books of the CBRT.</p> <p>The operations of the EFT are fully subject to the internal audit process of the CBRT.</p> <p>The CBRT does not reuse the collaterals placed with it.</p>
Key consideration 2	An FMI should have prompt access to its assets and the assets provided by participants, when required.
Description	All the collateral assets except those placed in the ICSDs are in the full control of the CBRT. The collaterals placed in the ICSD are held in the name of the CBRT and hence can be easily accessed subject to the operating hours of the ICSD.
Key consideration 3	An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.
Description	All the collateral assets except those placed in the ICSDs are in the full control of the CBRT. The collaterals placed in the ICSD are held in the name of the CBRT and hence can be easily accessed subject to the operating hours of the ICSD.
Key consideration 4	An FMI’s investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.
Description	<p><i>Investment strategy & Risk characteristics of investments</i></p> <p>The EFT is owned and operated by the CBRT. The CBRT does not reuse the collateral placed with it. Its investment strategy as a central bank is outside the scope of this assessment as noted in the CPMI-IOSCO publication on the application of PFMI to central bank operated FMIs.</p>
Key conclusions	The EFT system is owned and operated by the CBRT. The settlement accounts of the participants are in the books of the CBRT. The collaterals collected for the liquidity support options are either held in the ESTS or in ICSD in its name. The CBRT does not reuse the collateral. The investment strategy of the CBRT is outside the scope of this assessment.
Assessment of Principle 16	Observed.
Recommendations and comments	

PS	CSD	SSS	CCP	TR
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Principle 17: Operational risk

An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfillment of the FMI's obligations, including in the event of a wide-scale or major disruption.

Key consideration 1 **An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.**

Description

Identification of operational risk

Operational risk is managed at the CBRT corporate level. The CBRT has established a Business Continuity Committee and has tasked this with identifying operational risks, and mitigating them through developing and testing business continuity plans.

The CBRT's Business Continuity Strategy Document, prepared by the Business Continuity Committee, categorises the sources of operational risk (sources required to manage all the processes including the sub-processes) into labour, information (data and documents), physical infrastructure, network infrastructure and the system. Definitions of these categories are as follows:

- Labour includes all the personnel who work at the headquarters, in Ankara and Istanbul branches,
- System includes all the hardware and software,
- Information includes all types of raw or processed data and reports that are both in and out of the system,
- Physical infrastructure includes the elements such as the structural features of premises and the buildings, the technological infrastructure and hardware, equipment and furniture,
- Network infrastructure includes the elements such as telephones, fax machines, external network connections and information communication technology related devices.

In addition to the corporate level business continuity activities, the Risk Management Framework of the CBRT Payment Systems, which has been developed based on ISO 31000, is used for the identification, monitoring and management of the operational risks that arise from the internal (the system, labour, etc.) and external (participants, interconnected systems, etc.) sources of risk.

The EFT, as a part of the CBRT Payment and Securities Settlement Systems have been designed and developed within the CBRT. The design principles have paid attention to resilience, robustness and recovery facilities. The sources of potential single points of failures have been eliminated by using the mechanisms of full redundancy in the hardware

and network. Moreover, the systems are reviewed annually with respect to these features and facilities.

The CBRT data centres – primary and secondary housing the IT systems are categorized as Tier 3, as per the internal assessments of the CBRT. Tier 3 data centres are designed to have an up time of 99.9%.

In the CBRT, in order to ensure the continuous provision of critical services, the staffs that are considered critical for the provision of these services have at least one backup. In addition, guides and procedures, which describe the steps to be followed by the CBRT staff to perform the critical operations, are documented so that the CBRT staff other than primary and substitute ones can carry on these services in case of emergency. This is tested as part of the business continuity planning and staff other than the primary and substitute ones are required to perform the activities.

Information and documents are kept and backed up in line with the principles of the CBRT's Information Security Policy. Data, which are classified as critical, are kept in two copies in fireproof safes, one of which is located at the backup centre.

Until the date of this report, no single point of failure with regards to human resources, information sources, physical and communications infrastructures or information systems of the CBRT Payment Systems has been identified.

Management of operational risk

The Risk Management Framework of the CBRT Payment and Securities Settlement Systems includes the goals and principles, roles and responsibilities, review policies and the flows and details about the periodic application of the framework. Operational risks of the CBRT Payment and Securities Settlement Systems are also managed on the basis of this framework.

The scenarios for the business continuity and disaster recovery management of the CBRT Payment and Securities Settlement Systems are defined in the CBRT Payment Systems Business Continuity Application Plan. The actions to be taken by the participants when these scenarios materialize are given in the CBRT Payment Systems Disaster Recovery and Contingency Guide, which also contains the technical and operational procedures. These have been shared with the participants and has been used for the past BCP testing. These documents are now being reviewed and a new version released in Q3 2016.

Policies, processes and controls

The most important source of operational risk for the EFT system is the information system, which is composed of hardware, software and communications infrastructure. The EFT system as part of the CBRT Payment and Securities Settlement Systems have been developed by using the CBRT's proprietary enterprise information technology platform. All of the critical CBRT systems have been developed and are running on this platform, and benefit from the flexibility, stability, security and capacity planning of this platform. The platform uses modern technological

hardware and software facilities, and applications are developed as per approved written processes based on the industry IT standards and best practices.

The CBRT has established an Information Security Management System based on ISO 27001 to ensure the confidentiality, integrity and availability of all information assets. All the security measures, controls, and all the security tests including vulnerability scanning and penetration testing, are carried out in accordance with the principles and objectives of the Information Security Policy.

All the services provided within the scope of IT operations have been classified according to the Information Technology Infrastructure Library (ITIL) framework and service level agreements have been agreed upon. All the events, incidents, problem and service requests related with the CBRT Payment and Securities Settlement Systems are managed according to the ITIL compliant framework. The CBRT Payment Systems Service Desk is the first and only point of contact for the execution of service operations. Technical and operational experts take part at the second level.

The IT portfolio, project, change and configuration management activities are carried out according to the approved processes, which are established based on the standards and best practices, and to procedures identified in these processes. The CBRT's Corporate Portfolio and Project Management Methodology have been developed by using the methodology of the Project Management Institute (PMI). The Change Management and Configuration Management are carried out according to ITIL v3.

The procedures are reviewed and tested regularly and after every major change. Tests are performed in an environment similar to production so that all the potential risks are minimized as much as possible.

In addition to that, the CBRT Payment Systems Risk Management Framework, which is used for managing all types of risks of the systems, has been developed based on ISO 31000.

The risks arising from the human resources are also handled by the practices of the CBRT Human Resources Department. The CBRT employs experts and qualified personnel in their fields and improves the knowledge and skills of existing personnel through extensive training continuously.

Apart from the Bank's internal training, which constitutes a part of the in-service training, Bank's personnel also participate in the short and long term training programs organised by other organizations and institutions both in Turkey and abroad. The CBRT's employee turnover rate is very low.

The code of business conduct and the information security rules that must be complied with and the sanctions to be imposed in case of a default are specified in the Disciplinary Regulation of the CBRT and the CBRT Information Security Policy, and presented to all the employees. Periodic activities are carried out for briefing the personnel and increasing their awareness on Information Security Policy. Moreover, critical processes in the system are carried out with the approval of at least two employees, as

	<p>required by the Bank’s authorisation policy. The authentication is based on user-id and password and user-ids are tagged to specific IP addresses.</p> <p>The requirements for all of the improvements in the CBRT Payment and Securities Settlement Systems are planned considering the factors of budget, human resources and schedule and in cooperation with relevant departments, and are managed with the corporate project and portfolio management methodology in a measurable way. Projects are prioritised taking into account the requirements, legal obligations, cost-benefit and risk assessment result.</p> <p>In order to minimise the risks arising from the changes, the systems are updated, approved, monitored, tested and then opened to service in the production environment, and predefined processes are followed during these activities.</p>
Key consideration 2	<p>An FMI’s board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI’s operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.</p>
Description	<p><i>Roles, responsibilities and framework</i></p> <p>The Business Continuity Committee, which was established by the CBRT’s Board in December 2009, takes actions to ensure business continuity and to mitigate the operational risks at the corporate level.</p> <p>The Committee is chaired by a vice governor and is composed of executive directors of the relevant departments. The Committee appoints working groups, which consist of representatives from the related departments, to carry on the business continuity activities. The Business Continuity Committee reports to the Executive Committee when required and presents a report to the Board at least once a year.</p> <p>As part of the business continuity studies of the CBRT, the critical processes of the EFT as a part of the CBRT Payment and Securities Settlement Systems have been identified via impact and risk analyses. Based on this the CBRT Payment Systems Department Business Continuity Application Plan has been prepared. The roles and responsibilities of the recovery teams at the corporate level are defined in the CBRT’s Business Continuity Strategy Document, whereas the details of the groups that are specifically constituted for the CBRT Payment Systems are defined in the CBRT Payment Systems Department Business Continuity Application Plan.</p> <p>Moreover, all types of risks in the CBRT Payment Systems, including the operational risks, are managed at the departmental level within the context of the CBRT Payment Systems Risk Management Framework (described in principle 3). The Framework is reviewed and updated when needed or at least once a year. The activities carried out within the framework, the developments and the results of risk assessments are presented to the Executive Committee at least once a year, and to the CBRT Board as a part of the performance planning and reporting process.</p>

	<p><i>Review, audit and testing</i></p> <p>The strategies, policies and documents that are in the scope of the CBRT business continuity studies are reviewed by the Business Continuity Committee.</p> <p>The CBRT's Business Continuity Plan and CBRT Payment Systems Department Business Continuity Application Plan are tested regularly at least once a year. However, interim tests are also performed when a change in the business processes or human resources takes place or when the Business Continuity Application Plan is amended. The test program and results are reviewed by the Committee and periodically audited by the Audit Department.</p> <p>Tests are carried on the disaster recovery centre or on a test environment constructed with a configuration similar to that of the production environment. In addition, the test requests of the participants are met in coordination with the other relevant departments of the CBRT.</p> <p>When needed, special purpose questionnaires are used to survey the readiness level of participants for business continuity and disaster recovery, to learn their expectations from the CBRT, and to take their suggestions and opinions.</p>
Key consideration 3	An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.
Description	<p>The Business Continuity Strategy of the CBRT defines the acceptable downtime for critical processes as 1 hour. The Recovery Time and Recovery Point Objectives [RTO and RPO] have been defined for each sub-process in order to maintain the critical business functions. Besides, the Business Continuity Application Plan has been prepared so that the time critical functions are resumed in one hour, and the settlement obligations are accomplished within the specified time objectives and before the end of the day. The Business Continuity Application Plan is tested at least once a year.</p> <p>The performance program of the IT Department of the CBRT aims an annual up time of over 99% for the main computer system, database and communications infrastructure hosting the EFT system as part of the CBRT Payment and Securities Settlement Systems.</p> <p>In addition to business continuity objectives, the performance program of the IT Department involves performance objectives and indicators related to the technical performance of the EFT system as part of the CBRT Payment and Securities Settlement Systems. For instance, the performance objectives for the average settlement time have been specified as 30 seconds for EFT and ESTS, and as 60 seconds for RPS. Transaction volumes and average processing times are reported daily on the User Group web site, and are included in the CBRT Payment Systems Monthly Reports.</p> <p>The events and incidents in the components of the CBRT Payment and Securities Settlement Systems are monitored in real time by using the service management applications. The relevant parties are informed at once and all the incidents are recorded in the database. As a fundamental part of</p>

	<p>the service management practice, a service catalogue, which include all the services provided together with the assigned service level agreement, has been created and announced to the participants. All incidents that occur in the CBRT Payment and Securities Settlement Systems are listed in the CBRT Payment Systems Monthly Report. The responses to these incidents and the cases for which the response times exceeded the committed service level agreements are further evaluated. The Performance Program of the IT Department for 2015, has the objective of a maximum of 5 minutes for the average resolution time of incidents handled by the Service Desk.</p> <p>The performance objectives and their realisations are monitored and the results are presented to the CBRT Board once a year. In addition to that, the satisfaction levels of the users are measured via post incident surveys. The responses are collated and presented in the annual CBRT payment systems report.</p> <p>In order to achieve operational reliability objectives, a testing policy employing extensive testing on a regular basis has been developed. Accordingly, disaster recovery tests, functional tests, capacity and performance tests are performed based on the scenarios described in the CBRT Payment Systems Department Business Continuity Application Plan. New functions and changes are extensively tested, with the involvement of participants if needed, and are put into service within the knowledge of all stakeholders.</p> <p>System components and resources are monitored regularly. The Incident Management System has been used to detect, respond, resolve and report the incidents that may lead to emergency situations. The events related to participant interfaces and connections are included in the Incident Management Systems and notifications to participants are available. The Problem Management System has also been established to analyse the root cause of an incident. All actions taken to manage a problem are recoded and managed in the system.</p> <p>Moreover, the Information Security Management System, established in the context of Information Security Policy, defines the rules for ensuring the confidentiality, integrity and availability of all information assets of the CBRT and for securing the processes that make use of these assets.</p>
Key consideration 4	An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.
Description	<p>Stress tests and performance tests are carried out with the involvement of participants in test environments that are similar to the production environment. If the result of the impact analysis performed within the context of the Change Management Process necessitates, the performance and capacity tests are repeated after all significant changes.</p> <p>The capacity of the systems are adjusted so that the accumulated messages can be processed within one hour and before the end of the day once the systems start to operate after a long lasting disruption. The total message volumes are continuously monitored; the current volumes and increase in volumes, peak days and the projected message volumes are regularly reported. Similarly, the resource requirements for the system are reviewed periodically.</p> <p>The performances and resource usage of the components of the overall CBRT Payment and Securities Settlement Systems are continuously</p>

	monitored. Threshold based early warning mechanisms have been developed for specific parameters.
Key consideration 5	An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.
Description	<p><i>Physical security</i></p> <p>The Information Security Policy of the CBRT defines the rules for ensuring the confidentiality, integrity and availability of all information assets of the Bank and for securing the processes that make use of these assets.</p> <p>The article “<i>Physical and Peripheral Security of Information Security Policy</i>” of the policy document defines the principles and procedures regarding the safety of the secure zones and the equipment in the CBRT premises. The same article also specifies the principles and procedures for ensuring the physical and peripheral safety against the risks arising from the unauthorized access and damages to information, work areas, personnel and equipment located at the buildings and facilities of the CBRT.</p> <p>In addition, the Preventive Security Services Directive of the CBRT is binding for the Information Security Policy in respect of the rules that must be obeyed for ensuring physical security. Project Management and Change Management processes are carried out according to the physical security principles stated in Information Security Policy.</p> <p><i>Information security</i></p> <p>The principles stated in the Information Security Policy specify the principles and procedures for ensuring the safety of all information assets in the CBRT. Within the context of Information Security Policy Management System, all information assets have been identified, impact analysis for possible threats have been made and the risks have been mitigated using proper controls.</p> <p>These studies are regularly repeated and necessary measures for the new conditions are put in place. The issues and results of the studies regarding the Information Security Management System, which is promoted by the top management, are assessed by the Information Security Committee.</p> <p>This committee is chaired by the ED of the IT department and its members are the Deputy General Managers of all the departments in Ankara and the head of the Ankara branch of the CBRT. The Committee gathers on an annual basis and prepares the action plans based on the results of annual assessments. Moreover, Information Security Committee report annually to the Executive Committee and the Board of the CBRT, and are discharged by the Board.</p> <p>The Information Security Management System and the Information Security Policy of the CBRT are based on the ISO 27001 standard.</p>

<p>Key consideration 6</p>	<p>An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.</p>
<p>Description</p>	<p><i>Objectives of business continuity plan</i></p> <p>The business continuity objectives (RTO, RPO <i>etc.</i>) have been defined in the CBRT's Business Continuity Strategy document. Within the scope of business continuity studies, the critical processes have been identified by performing impact analysis on all sub-processes and the criteria such as acceptable longest downtime and bearable data loss levels have been determined.</p> <p>The BCP of the CBRT deals with the critical processes that have been identified as having acceptable downtimes up to 1 hour. The processes of the overall CBRT Payment and Securities Settlement Systems are considered as critical processes.</p> <p>The BCP contains basic failure scenarios, which have been formed by combining various threats that yield to similar results with respect to their impacts on the resources, as well as institution wide action plans and governance procedures. There are nine specific scenarios that are included in the BCP: Eight of the scenarios involve failure of some or all of the 5 components – PIS, EFT, RPS, ESTS and network. One scenario covers failure of one or more participants.</p> <p>The Business Continuity Application Plans, on the other hand, constitute parts of the BCP and are formed by the relevant departments that own the critical business processes. Within the scope of the Business Continuity Application Plan prepared by PSD, the risks attributed to the critical business processes in the payment systems have been handled by using the Risk Management Framework of the PSD. Also, within the same plan, the controls have been defined, disaster recovery scenarios including extreme but plausible conditions have been determined and operational and technical procedures for disaster recovery have been prepared.</p> <p>The PSD Business Continuity Application Plan also defines the recovery teams that will work in emergency situations, their roles and responsibilities and the communication procedures to be used between these departmental recovery teams and the corporate level recovery teams.</p> <p><i>Design of business continuity plan</i></p> <p>The Payment Systems Department Business Continuity Application Plan focuses on the impacts that may be caused by contingency situations including extreme scenarios where the operations are disrupted on the critical infrastructures and services. The Plan targets to resume the</p>

operations of the overall CBRT payment and securities settlement systems in 1 hour once a devastating event takes place.

The emergency scenarios in the Business Continuity Application Plan also include alternative methods such as using the Emergency Application Package (EAP), a facility built using completely different hardware and software platforms, enabling the execution of payment systems operations in a different platform, and following manual procedures for the provision of time critical services. The EAP can be invoked with manual feed of the last operational balances in the EFT system. This system does not have the full-fledged functionality of the EFT system and functions based on upload of transactions which are netted periodically.

There are formal procedures for delaying end-of-day operations in situations where the settlement functions cannot be completed before the end-of day.

As stated in the Business Continuity Strategy document, in emergency situations the CBRT Communications and Foreign Relations Department is responsible for the communications with the mass media and for the liaisons with the Banking Regulation and Supervision Agency (BRSA), the Undersecretariat of Treasury, Borsa Istanbul (BIST) and any other institutions in Turkey or abroad with which the CBRT has operations. Moreover, the Business Continuity Strategy Document describes the recovery teams that will work in emergency situations and defines their roles and responsibilities.

In addition to the recovery teams, special teams play roles in emergency situations so as to meet the additional requirements arising from the operations of payment systems. For instance, the role of service desk and special technical and operational task groups functioning within the context of the Business Continuity Application Plan have also been defined.

Secondary site

The components of the CBRT payment and securities settlement systems work at two different premises in a continuous backup and load sharing mode. To minimize the risks induced by the third-party service providers, the networking infrastructure is backed up by installing two physically separate and redundant networks provided by two different service providers and by utilizing two different networking technologies.

The human resources required to maintain the operations of the system have been included in the plan. A Disaster Recovery Management Centre has been established at the secondary site and has been equipped with the infrastructure and hardware that the personnel may need to resume the operations.

The scenarios in the Business Continuity Application Plan also cover alternative methods that may be used to achieve the resilience of the CBRT Payment and Securities Settlement Systems in accordance with the continuity objectives.

In addition the EAP can be used if there is a simultaneous disruption to both the infrastructures. The EAP also constitutes a good alternative for cyber incidents, which could impact also the integrity of the data, impairing it in such a way that the RTO becomes hard to achieve.

Moreover, as a part of the worst case scenarios, procedures for manual execution of time critical operations have been prepared and included in the Business Continuity Application Plan.

Review and testing

The CBRT's BCP is reviewed at least once a year and the effectiveness of the plan is tested within the context of specified functions and processes. The purpose of the test is to ensure that the plan is complete, essential and applicable and the RTO and RPO objectives are achievable. The other purpose of the test is to identify and enhance the aspects that need to be improved.

The disaster scenarios of the Business Continuity Application Plan are also tested at least once a year. However, the tests can also be performed in interim periods when there is a change in business processes, personnel or plans.

The participants, especially the critical and systemically important ones, are included in the business continuity test plans. In addition, the service requests of the participants to test their own business continuity arrangements are met and supported in cooperation with the relevant departments of the CBRT. Whenever deemed necessary, special purpose questionnaires are conducted to assess participants' business continuity and disaster recovery readiness levels, and to collect their suggestions, opinions and expectations from the CBRT. Recently a survey was administered to all participants to gather information on their BCP, Cyber resilience and also quality of the BCPs. The results of the survey are presented below:

The questionnaire consisted of questions grouped into 4 main parts:

- The activities related to the business continuity and disaster recovery throughout the entire institution.
- Business continuity and disaster recovery plans of the participant for the CBRT's payment and securities settlement systems.
- The works carried out on cyber resilience at the institution.
- The feedback on applications and services given by CBRT for disaster recovery of its payment systems.

Unanswered questions were accepted as negative response. Highlights from the outcome of the survey are as follows:

- All participants have a defined process for business continuity. More than half of the participants (mostly critical participants) follow a generally accepted standard like ISO 22301 or BS 25299.
- Almost all participants' BCP are audited or reviewed by both internal and external auditors regularly (for most of them it is annual).
- Almost all participants identified their critical processes related with the CBRT payment and securities settlement systems.

- Almost all participants clearly defined the roles and responsibilities in their BCP.
- Almost all participants defined their minimum service levels in emergency situations.
- All participants have a disaster recovery center (secondary site) to be used in case of a disaster in their main sites. The secondary site is identically constructed as the main site for 34 participants.
- Almost all participants (43) regularly, generally on a yearly basis, test their disaster recovery and implementation plans. Nearly half of the participants include the scenarios in which both sites are not operational in these tests.
- 37 participants consider cyber security incidents in setting their business continuity objectives and 28 participants have a special process for the responses to cyber related incidents.
- 30 participants have internal cyber incident response teams. Moreover, some of these participants and the others outsourced services for cyber incidents' (identification, detection, response, recovery, etc).
- All participants carry out regular penetration tests (by getting a service from an external security company or from internal experts).
- All participants have a promulgated information security policy and they follow programs to raise the cyber security awareness of its employees.
- The participants mostly gave positive feedback to the applications and services given by the CBRT for disaster recovery of its payment systems. They in particular noted that the amount of information and communication channels provided by the CBRT is sufficient and good enough.
- A few participants stated that the number of tests should be increased and be more extensive.

The result of the survey is being used by the CBRT for developing the new updated version of the CBRT Payment System Business Continuity Implementation Plan and the CBRT Payment Systems Disaster Recovery and Contingency Guide. This version will be released in Q3 2016.

Test scenarios are defined in the annual test plan prepared by the Business Continuity Committee. Departments are expected to prepare their test plans in accordance with the annual plan. The Business Continuity Committee approves the departmental test plans and evaluates their results. In addition, the entire testing process and results are audited by the Audit Department. Business continuity tests are also covered by payment systems oversight activities.

The testing activities and regular improvements related with business continuity may involve the critical participants, all participants, or linked FMIs depending on the scenarios. The service requests by these stakeholders for testing their business continuity plans are also met in cooperation with relevant departments.

Key consideration 7	An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.
Description	<p><i>Risks to the FMI's own operations</i></p> <p>All components of the CBRT payment and securities settlement systems, except the private network, have been developed in-house using internal resources of the CBRT. Although the private network is owned by BAT and operated by the CBRT, the telecommunication services are provided by the third party service providers. To minimize the risks arising from the service providers, the network is backed up with two redundant, physically separated and technologically diversified backbones provided by two different service providers. As an extension to the core networking services acquired from the providers, detailed agreements are put under contract with the service providers within the scope of these support and maintenance services, and the services taken are assessed by all relevant departments at the end of the contract period.</p> <p>Within the scope of the Risk Management Framework of the CBRT Payment Systems, the risks arising from all participants especially the critical ones and linked FMIs are also handled. For this purpose, the critical participants of the systems are determined regularly using a network analysis based on sink-rank model. The business continuity efforts of the participants and the measures they take in this respect are monitored by administering surveys to them.</p> <p><i>Risks posed to other FMIs</i></p> <p>Since the CBRT payment and securities settlement systems constitute the backbone of the national payment system of Turkey and the daily final settlement of several other FMIs are made by transfers over these systems, any disruption in the CBRT Payment Systems may directly affect other FMIs. Therefore, the acceptable outage periods have been determined accordingly and alternative methods (e.g., Emergency Application Package, Offline Connection Facility for the Participant Interface System, manual procedures) for the resumption of the time critical processes have been developed and continuously improved.</p> <p>The final balances that are generated at the systems of the Interbank Card Center (BKM) and the ACH system are also settled in the EFT system.</p>
Key conclusions	<p>The CBRT Payment Systems have a comprehensive operational risk management Framework spanning people, process and systems. The risk management framework is reviewed once a year.</p> <p>Industry best practices for IT risk management framework – ISO 27001 and ITIL for IT services management, have been used.</p> <p>There are adequate processes and procedures in place to address people aspects and the IT systems and processes have been developed using industry standards and best practices.</p>

	<p>There are periodic IT security reviews and there are dedicated organizational arrangements in place for monitoring and managing the IT security aspects.</p> <p>The IT infrastructure is built in a way that there is no single point of failure and there is full-fledged backup site which works on a load sharing basis with the main site. In addition there is an application package developed using a completely different hardware and software platform to cover the risk of a simultaneous impact on both the infrastructures, which is a possibility in particular with cyber risk incidents.</p> <p>There is a well-laid out BCP plan with an organized governance arrangement to monitor and review its execution. However the BCP include only scenarios that relate to the infrastructure of the CBRT payment and securities settlement systems. Scenarios, either arising within the CBRT payment and securities settlement systems, within the CBRT or externally, which can cause a widespread impact have not been included.</p> <p>The participants are included in the BCP tests and there are plans underway to include complex scenarios to fully cover business continuity risks arising from and posed to other FMIs and participants– in particular Takasbank and MKK.</p> <p>The PSOR covers operational risk management in articles 17-20, however there is no explicit mandate on this and there is no structured process to measure ongoing compliance with these aspects. However, the CBRT recently surveyed the participants to assess their BCP plans and cyber resilience. All the participants reported having BCPs, but there were some gaps in terms of the quality of the BCP and cyber resilience readiness of some participants. The CBRT is already addressing this as part of its revised business continuity guide.</p> <p>The CBRT includes the risks it poses to other FMIs as part of the framework for assessing risks from and to participants.</p>
<p><i>Assessment of Principle 17</i></p>	<p>Broadly Observed</p>
<p><i>Recommendations and comments</i></p>	<p>The CBRT could build on the specific provisions in the PSOR to include explicit mandates with respect to operational risk management for its participants and have a mechanism to assess compliance to those on an ongoing basis.</p> <p>The CBRT could consider including more stringent operational risk management measures for the participants with a large share of transactions, based on the monthly network analysis being carried out.</p> <p>The CBRT could also consider incorporating a more structured assessment of the operational risks it can pose to other FMIs and the risks it could be exposed from them. This assessment could become the basis for the more detailed and complex scenarios being proposed for inclusion in the revised business continuity plans. These scenarios could include:</p> <ul style="list-style-type: none"> • Failure closer to the market closing time – say at 4.30 PM; • Failure of the Takasbank inter-bank money market platform; • Impact to the BIST platforms;

	<ul style="list-style-type: none"> • Impact to MKK; • Failure on the days of a government securities primary issuance or a foreign exchange auction; and, • Operational impact on any external provider used by several participants and FMIs.
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PS	CSD	SSS	CCP	TR
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Principle 18. Access and participation requirements

An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.

Key consideration 1 **An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.**

Description

Participation criteria and requirements

The Article 5 of the PSOR defines the legal and operational aspects of participation criteria and requirements as follows:

- All banks operating in Turkey in accordance with the Banking Law, and the MKK may participate in the Systems.
- In order to participate in the CBRT payment and securities settlement systems a bank should:
 - a. apply in writing to the CBRT with banking permit and authorization documents,
 - b. be approved for participation by the executive committee of the CBRT
 - c. sign the Participation Contract,
 - d. have an account with the CBRT,
 - e. complete the procedures in BAT that are required for participation in the Systems,
 - f. have the software required to access the systems, prepare the infrastructure for network connection and have these arrangements approved by the CBRT,
 - g. conform to the infrastructure preparation calendar and to the participation date determined by the CBRT, and complete the preparations without delay.
 - h. Successfully complete the system acceptance tests.
- Without being subject to the provisions of Article 6 and 28 of the PSOR [related to leaving the system and penal provisions], the MKK has an ESTS account and participates only in the ESTS component with the purpose of book-keeping the securities on investors.

Financial criteria and requirements to be a bank, on the other hand, is defined in Banking Law as “Its paid-up capital, consisting of cash and free of all kinds of fictitious transactions, should not be less than 30 million Turkish liras.”

	<p>In addition as a policy measure the participation is approved for all three systems – EFT, RPS and ESTS and participation to specific systems alone is not allowed. The only exception is the MKK, which participates only in the ESTS component.</p> <p><i>Access to trade repositories</i></p> <p>This item is not applicable to the EFT.</p>
Key consideration 2	<p>An FMI’s participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI’s specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.</p>
Description	<p><i>Justification and rationale of participation criteria</i></p> <p>The requirements related to IT infrastructure and related aspects are required to mitigate operational risks.</p> <p>The EFT system by itself does not have any liquidity support mechanisms. EFT being a RTGS system needs access to ample liquidity. As per the prevalent policy framework only banks have access to liquidity support from the CBRT. Due to this, currently only banks are allowed to participate in the EFT system.</p> <p><i>Least restrictive access</i></p> <p>The main criteria for participation to the systems are being a bank operating in Turkey and meeting the operational requirements. The PFMI allow for specific exceptions related to central bank operated FMIs.</p> <p>The applications of banks for participating in the systems are approved by the CBRT Executive Committee, which takes the opinions of related the CBRT departments into consideration. The applications are assessed by the HITI Committee in the first place and the final decision is made by the Executive Committee. The need for a change in participation criteria is reviewed in this process.</p> <p>The PTT bank (division of the Turkish Post) had applied for access and was declined by the HITI committee for not having effective means of liquidity management. The PTT bank offers some prepaid card and debit cards linked to postal cheque accounts which is akin to a current account offering zero interest. The PTT does have access to the BKM card switch.</p> <p>Mellat Bank, an Iranian bank, was earlier denied access due to the US and other international sanctions on Iranian banks. This bank has re-applied at the beginning of 2016 after the lifting of sanctions and has now become a participant as of April 8th, 2016.</p> <p>Habib Bank, a Pakistani bank, had sought access only to the RPS system and was denied access to the system.</p>

	<p><i>Disclosure of criteria</i></p> <p>System participation criteria are disclosed in the “<i>Who can be a participant?</i>” section of the CBRT Payment Systems Web Site²⁴. The PSOR, which contains detailed information on operational workflow for becoming a participant, is shared with participants through the CBRT Payment Systems User Group Web Site.</p>
Key consideration 3	An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.
Description	<p><i>Monitoring compliance</i></p> <p>All participants of the EFT system are under the supervision of the BRSA, which monitors their continued compliance to applicable banking regulations. If the BRSA decides to terminate the banking license of a participant, the provisions of the PSOR article 7 and 8 can be invoked to manage the exit of the participant from the EFT system.</p> <p>The conformance of the participant to the operational requirements are assessed by the CBRT as part of the ongoing monitoring of the EFT system transaction flows.</p> <p><i>Suspension and orderly exit</i></p> <p>Suspension and orderly exit operations are performed in accordance with the PSOR. According to the PSOR, without prejudice to the Article 68 [penal provisions] of the CBRT Law, the CBRT can take measures of “warning”, “temporary suspension” and “permanent orderly exit” for a participant.</p> <p>Participants’ bank and branch codes in the CBRT Payment Systems are updated by add/remove operations when necessary. In the case of a suspension or orderly exit of a participant, all participants are informed through announcements made via e-mail group, and the participant list in http://eftemkt.tcmb.gov.tr is updated.</p>
Key Conclusions	<p>Criteria and requirements for participation are clearly stated in the CBRT Payment Systems Rule Book and disclosed to related parties. Only banks and the MKK, which is a special participant of ESTS for the implementation of safekeeping of the securities in the name of customers, are accepted as participants in the CBRT payment and securities settlement systems. Only banks are participants in the EFT system.</p> <p>The policy decision on only allowing access to banks has been taken based on considerations of liquidity risk management.</p> <p>The CBRT does not allow access to specific components of the CBRT payment and securities settlement systems, all participants have access to the EFT, RPS and ESTS system. The MKK is the only exception.</p> <p>The CBRT monitors compliance to operational aspects of the participation criteria and is guided by the BRSA for the continued qualification of the</p>

²⁴ <http://eftemkt.tcmb.gov.tr>

	participant to function as a bank. Suspension and orderly exit rules are stated in the PSOR and disclosed to participants.
Assessment of principle 18	Observed
Recommendations and comments	

PS	CSD	SSS	CCP	TR
●	●	●	●	●

Principle 19. Tiered Participation Arrangements	
An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	
Key consideration 1	An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.
Description	<p><i>Tiered participation arrangements, Risks to the FMI</i></p> <p>According to the Article 5 of the PSOR, only banks that operate in Turkey and the MKK can be a participant in the CBRT payment and securities settlement systems. In the PSOR, there is no definition or arrangement for tiered participation in the systems.</p> <p>The intermediary institutions or payment institutions that cannot participate in the systems can perform operation on the system via the facilities provided by the system participants for their customers, but they are not considered as a tiered participant.</p> <p>There are however some arrangements which fall under the “tiered participation” arrangement as defined in the PFMI:</p> <ul style="list-style-type: none"> - Institutions like PTT Bank and Habib Bank access the EFT system through other direct participants. - The Takasbank operates the Takasbank Electronic Funds Transfer System (TETS), which is used by brokers to move their funds from their accounts held with Takasbank to other banks, using the EFT and RPS system. These transactions are structured to appear as a transactions from a special designated branch of Takasbank. The brokers are able to initiate the transaction themselves.
Key consideration 2	An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.
Description	As mentioned for the KC 1, the PSOR does not acknowledge tiered arrangements and as such there is no monitoring of tiered participation arrangements.
Key consideration 3	An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and

	indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.
Description	<p>As mentioned for the KC 1, the PSOR does not acknowledge tiered arrangements and as such there is no monitoring of tiered participation arrangements.</p> <p>The CBRT, in 2013, built in special fields in the messages to track the details of the transaction initiator and other details. There is also an ongoing initiative at the request of the Takasbank to introduce more analytical tools related to these.</p>
Key consideration 4	An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.
Description	As mentioned for the KC 1, the PSOR does not acknowledge tiered arrangements and as such there is no monitoring of tiered participation arrangements.
Key conclusions	<p>The PSOR acknowledges and regulates only the direct participants in the CBRT payment and securities settlement systems and there is no definition or rules set for indirect participation. Entities that are not eligible for participation can perform operations the participants, but are treated as customers of participants, rather than indirect participants.</p> <p>Based on the discussion in principle 18, it is clear that two banks and one entity carrying out electronic payment services, are accessing the EFT system through other banks. Other market intermediaries and non-bank financial entities also access the services of the EFT and also likely other elements of the CBRT payment and securities settlement systems.</p> <p>The usage of TETS by brokers and other market intermediaries is also an example of a tiered participation arrangement.</p> <p>The CBRT has developed capability to track the details of the initiator, recipient and purpose of transactions, based on specialized fields in the message formats. These tools can be used to develop a comprehensive monitoring framework for tiered participation arrangements.</p>
Assessment of Principle 19	Partly Observed
Recommendations and comments	The CBRT should consider instituting mechanisms to collect information, about the non-bank financial companies that access the services of the EFT through participants. Information like the terms of the service between the participant and the non-bank financial entity, the typical transaction volume and value, and any credit extension and liquidity facilities offered. The CBRT should then assess any risks arising from these tiered arrangements.

PS	CSD ●	SSS ●	CCP ●	TR
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Principle 20. FMI Links

An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.

Key consideration 1	<table border="1"> <tr> <td>PS</td> <td>CSD ●</td> <td>SSS ●</td> <td>CCP ●</td> <td>TR</td> </tr> </table> <p>Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.</p>	PS	CSD ●	SSS ●	CCP ●	TR
PS	CSD ●	SSS ●	CCP ●	TR		
Description	The EFT system is a payment system and this principle is not applicable.					
Key consideration 2	<table border="1"> <tr> <td>PS</td> <td>CSD ●</td> <td>SSS ●</td> <td>CCP ●</td> <td>TR ●</td> </tr> </table> <p>A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.</p>	PS	CSD ●	SSS ●	CCP ●	TR ●
PS	CSD ●	SSS ●	CCP ●	TR ●		
Description	The EFT system is a payment system and this principle is not applicable.					
Key consideration 3	<table border="1"> <tr> <td>PS</td> <td>CSD ●</td> <td>SSS ●</td> <td>CCP</td> <td>TR</td> </tr> </table> <p>Linked CSDs should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between CSDs should be covered fully with high quality collateral and be subject to limits.</p>	PS	CSD ●	SSS ●	CCP	TR
PS	CSD ●	SSS ●	CCP	TR		
Description	The EFT system is a payment system and this principle is not applicable.					
Key consideration 4	<table border="1"> <tr> <td>PS</td> <td>CSD ●</td> <td>SSS ●</td> <td>CCP</td> <td>TR</td> </tr> </table> <p>Provisional transfers of securities between linked CSDs should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.</p>	PS	CSD ●	SSS ●	CCP	TR
PS	CSD ●	SSS ●	CCP	TR		
Description	The EFT system is a payment system and this principle is not applicable.					

Key consideration 5	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td>●</td> <td>●</td> <td></td> <td></td> </tr> </table> <p>An investor CSD should only establish a link with an issuer CSD if the arrangement provides a high level of protection for the rights of the investor CSD’s participants.</p>	PS	CSD	SSS	CCP	TR		●	●		
PS	CSD	SSS	CCP	TR							
	●	●									
Description	The EFT system is a payment system and this principle is not applicable.										
Key consideration 6	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td>●</td> <td>●</td> <td></td> <td></td> </tr> </table> <p>An investor CSD that uses an intermediary to operate a link with an issuer CSD should measure, monitor, and manage the additional risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary.</p>	PS	CSD	SSS	CCP	TR		●	●		
PS	CSD	SSS	CCP	TR							
	●	●									
Description	The EFT system is a payment system and this principle is not applicable.										
Key consideration 7	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td></td> <td></td> <td>●</td> <td></td> </tr> </table> <p>Before entering into a link with another CCP, a CCP should identify and manage the potential spill-over effects from the default of the linked CCP. If a link has three or more CCPs, each CCP should identify, assess, and manage the risks of the collective link arrangement.</p>	PS	CSD	SSS	CCP	TR				●	
PS	CSD	SSS	CCP	TR							
			●								
Description	<p><i>Linked CCP default & Collective link arrangements (three or more CCPs)</i></p> <p>The EFT system is a payment system and this principle is not applicable.</p>										
Key consideration 8	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td></td> <td></td> <td>●</td> <td></td> </tr> </table> <p>Each CCP in a CCP link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked CCP and its participants, if any, fully with a high degree of confidence without reducing the CCP’s ability to fulfil its obligations to its own participants at any time.</p>	PS	CSD	SSS	CCP	TR				●	
PS	CSD	SSS	CCP	TR							
			●								
Description	<p><i>Exposures and coverage of exposures</i></p> <p>The EFT system is a payment system and this principle is not applicable.</p> <p><i>Management of risks</i></p>										

	<p>The EFT system is a payment system and this principle is not applicable.</p> <p><i>Information provided to participants</i></p> <p>The EFT system is a payment system and this principle is not applicable.</p>										
Key consideration 9	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>●</td> </tr> </table> <p>A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.</p>	PS	CSD	SSS	CCP	TR					●
PS	CSD	SSS	CCP	TR							
				●							
Description	The EFT system is a payment system and this principle is not applicable.										
Key conclusions	The EFT system is a payment system and this principle is not applicable.										
Assessment of Principle 20	Not applicable.										
Recommendations and comments											

PS	CSD	SSS	CCP	TR
●	●	●	●	●

<p>Principle 21: Efficiency and effectiveness</p> <p>An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.</p>	
Key consideration 1	<p>An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.</p>
Description	<p>During the development and improvement of the CBRT Payment and Securities Settlement Systems, the needs and the structure of the financial system of Turkey have been taken into consideration.</p> <p>Since the first generation EFT, which was one of the first examples in the World of RTGS system when it went into operation in 1992, the CBRT payment and securities settlement systems have been improved by taking into consideration the country's market needs, legal obligations, requirements from the participants, worldwide developments in the payment systems, needs arising from interoperability and interdependencies and technological developments.</p> <p>Accordingly, the CBRT cooperates with system participants, stakeholders, authorities and other FMI's and take their opinions and recommendations into consideration when defining workflows, message contents and daily operational procedures.</p> <p>Permanent technical and operational working groups have been formed within the BAT to improve cooperation with system participants.</p>

	<p>Additionally, during the User Group Meetings the opinions of the participants on system operations and possible enhancements are taken, information on projects and studies are shared. Participants can also communicate with the CBRT by forwarding questions and requests to the CBRT Payment Systems Service Desk and can track progress of their requests electronically.</p> <p>Additionally, through questionnaires, official communications, one-to-one or group meetings with participants and with other stakeholders feedbacks and recommendations are collected. When developing new systems or modules, specific working groups are formed with the participation of related parties in order to ensure efficient participation in the development process.</p> <p>National and international developments in finance and technology as well as new standards, principles and legal obligations that may affect the CBRT payment and securities settlement systems' workflow, infrastructure, technological design or operations are monitored, evaluated together with stakeholders, and the systems are updated accordingly if necessary.</p> <p>The systems have been restructured and improved during the period of 2011-2013 with modern technologies and have become more flexible allowing easier change management. The notable changes made in the 2011-2013 period include introduction of XML based message formats, enhancements to the offsetting algorithms and introduction of the RPS and ESTS system.</p>
Key consideration 2	An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.
Description	<p>The CBRT's main goals and objectives in payment and securities settlement systems is to <i>“ensure safe, efficient, effective and continuous operation of the systems.”</i> These goals and objectives are vital for financial stability and effective implementation of monetary policy. The fundamental policy and activities of the CBRT is disclosed to public through the CBRT web site²⁵.</p> <p>The CBRT Payment and Securities Settlement System forms the backbone of Turkish NPS, and hence the continuity of the systems is critical. For this reason, business continuity and disaster recovery plans have been developed to ensure the continuity of systems.</p> <p>Service levels of the systems for the settlement have been defined clearly and shared with participants. The design documentation of the systems states that a settlement will be completed in 60 seconds in EFT and ESTS, and in 15 minutes for RPS, provided that the sender has sufficient balance in the settlement account. Daily performance statistics are available in the CBRT Payment Systems User Group web site.</p> <p>The definitions regarding the CBRT services, priorities, response and solution times are defined in the CBRT Payment Systems Service Management Document, which is shared with participants. System incidents, change requests from participants and their progress are tracked electronically in Service Management System. Data and information in this system is regularly analysed and reported to the management; and necessary action plans are formed when needed. User satisfaction questionnaires are sent to participants through the Service Management System following the closure of an incident/service record in order to measure the efficiency and</p>

²⁵ www.tcmb.gov.tr/wps/wcm/connect/TCMB+EN/TCMB+EN/Main+Menu/PAYMENT+SYSTEMS/Objectives+and+Policies

	<p>effectiveness. Questionnaires and, the feedbacks received from stakeholders through different platforms constitute input for the assessment of performance in reaching the goals.</p> <p>Risks in the CBRT payment and securities settlement systems are managed within the CBRT Payment Systems Risk Management Framework. The risk criteria are defined in the framework. Risk management activities are reported periodically and assessed in the context of risk management goals.</p> <p>Additionally, performance goals and performance indicators are identified, assessed and reported to the Board within the annual Performance Programs and Performance Reports of the CBRT Payment System Department.</p>
Key consideration 3	An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.
Description	<p>The CBRT organizes regular meetings with participants to assess the efficiency and effectiveness of the CBRT payment and securities settlement systems. When needed, these meetings are supported with questionnaires, sub-group meetings and correspondence. Additionally, all requests, incidents and problem solving steps are recorded and reported regularly for the services provided.</p> <p>The Risk Management Framework is used as an important tool for effectiveness along with the governance model involving participants and the CBRT departments.</p> <p>All activities of the systems are subject to internal oversight in the context of efficiency and effectiveness.</p> <p>The CBRT Activity Based Cost Accounting regularly tracks payment systems costs, as with all other costs of the CBRT.</p> <p>The pricing policy of the CBRT Payment Systems has been defined and disclosed to the public as “<i>Messages in EFT and ESTS are subject to pricing in order to cover the investment and operating costs of systems’ hardware and software.</i>”</p>
Key conclusions	<p>Objectives and goals of the CBRT Regarding payment and securities settlement Systems are clearly defined and disclosed to the public on the CBRT’s web site.</p> <p>There are effective mechanisms in place for the participants to express the views and provide feedback on the functioning of the EFT system.</p> <p>The service satisfaction and performance of the system is tracked and reported to senior management. The pricing policy is clear and transparent and the fees are communicated to participants in an easily accessible manner.</p> <p>The CBRT also monitors the operational costs of the CBRT payment and securities settlement systems on an ongoing basis as part of the “activity based cost” accounting process.</p>
Assessment of Principle 21	Observed
Recommendations and comments	

PS ●	CSD ●	SSS ●	CCP ●	TR ●
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Principle 22: Communication procedures and standards

An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

Key consideration 1	An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.
Description	<p><i>Communication procedures</i></p> <p>The message exchange between the participants and the CBRT payment and securities settlement system is established via secure services and using XML based proprietary message formats. The CBRT payment and securities settlement systems communicate through a closed private network and provides services only within the country. The CBRT payment and securities settlement systems do not have international operations.</p> <p>Participants access the CBRT payment and securities settlement systems via a single interface – the PIS. The CBRT’s enterprise information platform provides easy integration with applications of the participants.</p> <p>The participants have access to features in the PIS which can be used to have a full Straight Through Processing (STP) processing of transactions. Many participants access the EFT system and other elements of the CBRT payment and securities settlement system in STP mode.</p> <p><i>Communication standards</i></p> <p>During the restructuring of the CBRT Payment and Securities Settlement System, the CBRT considered using the ISO 20022 format, based on feedback from participants it was decided to use XML based proprietary message formats.</p> <p>At present, it is easy to add new messages and develop the current messages according to needs. As the message format uses XML, conversion to the other messaging formats is also easy.</p> <p>The systems use International Banking Account Number (IBAN) for account numbers, and International Securities Identification Number (ISIN) for securities codes.</p> <p>Participants are defined by the four digit codes assigned by the CBRT. Conversion of these codes to BIC codes used in SWIFT is straightforward.</p>
Key conclusions	<p>Message exchange of the CBRT Payment Systems is managed via secure services using industry standard technologies and using XML based proprietary message formats. It is possible to easily convert XML messages used in the CBRT payment and securities settlement systems into other message formats.</p> <p>The PIS used to interface with the CBRT payment and securities settlement systems offers adequate tools to allow STP mode.</p>
Assessment of Principle 22	Observed

Recommendations and comments	-
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PS	CSD	SSS	CCP	TR
●	●	●	●	●

Principle 23: Disclosure of rules, key procedures, and market data

An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.

Key consideration 1 **An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.**

Description	<p><i>Rules and procedures, Disclosure</i></p> <p>The PSOR, defines the general rules on the operation of the CBRT payment and securities settlement system, their infrastructure and the right and responsibilities of the participants. The User Guide, defines the operation types and structure and use of messages. The PSOR and the User Guide are disclosed to participants through the CBRT Payment Systems User Group web site²⁶ which is accessible only to the participants. These documents are also shared with candidate participants during their application process.</p> <p>The PSOR defines:</p> <ul style="list-style-type: none"> • Rules regarding operations of the system (participation and resignation from membership, operating calendar - days and hours, finality and irrevocability of the settlement, DVP settlement, pricing details), • Powers of the CBRT, • Operational and technical obligations of the CBRT, • Obligations of a participant (about software, hardware, infrastructure, security, responsible employees, availability, service management, conformity to the rules , cooperation, obligations as a message sender or receiver, responsibilities), • Other rules for exceptional issues (disaster event, penal sanctions, resolution of disputes, etc.). <p>The User Guide contains technical and operational information on the structure and usage of all messages and workflow of operations used in the CBRT Payment and Securities Settlement System.</p> <p>In addition, general purpose data, introductory documentation and basic rules and procedures of the CBRT Payment and Securities Settlement System are disclosed to the public through the CBRT web site and the CBRT payment systems web site. Among the publicly available documents are the CBRT Payment Systems introductory booklet and brochure, working principles of the systems, pricing policy, system participation requirements and the “Payment systems in Turkey” published as part of the BIS Red Book series.</p> <p>The PSOR also includes rules on actions to be taken in non-routine but predictable cases, such as operations carried out by the CBRT’s on behalf of</p>
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²⁶ <http://eftemkt.tcmb.gov.tr/>

	<p>participants in emergency cases, resolution of disputes, and regulatory aspects.</p> <p>The feedback on the effectiveness and clarity of the documents are collected directly or indirectly through regular User Group Meetings and through participant questionnaires conducted on different issues regarding payment systems.</p> <p>Changes to the PSOR are reviewed in coordination and cooperation with all relevant CBRT departments, and are subject to the approval of the CBRT Executive Committee. The changes are announced to participants at least 15 days before its entry into force.</p>
Key consideration 2	An FMI should disclose clear descriptions of the system’s design and operations, as well as the FMI’s and participants’ rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.
Description	<p>Information on general design of the CBRT Payment Systems is shared with participants on the CBRT Payment Systems User Group web site. Operational issues and information on workflows are contained in the PSOR and the User Guide. The responsibilities of participants in the CBRT Payment Systems are defined in detail in the Rule Book.</p> <p>Participants sign the CBRT Payment Systems Participation Contract before participation. With this contract, a participant accepts and commits to the responsibilities and obligations defined in the agreement, the Rule Book and the User Guide.</p>
Key consideration 3	An FMI should provide all necessary and appropriate documentation and training to facilitate participants’ understanding of the FMI’s rules and procedures and the risks they face from participating in the FMI.
Description	<p>Documents containing detailed information on the rules and operation of the CBRT payment and securities settlement system, particularly the PSOR and the User Guide are accessible to participants in the Documents section of the CBRT Payment Systems web site.</p> <p>Upon changes that may affect participants’ usage (e.g., structural changes to the systems or critical updates on system functions), seminars, educations and presentations are organised for all participants or for smaller groups. Private training activities may also be organised for participants on their request.</p> <p>The feedback collected during annual User Group Meetings and through questionnaires also provides data for the participants’ additional educational and briefing needs.</p> <p>Participants may also access the technical and operational information on systems and send their change requests either by calling the Service Desk within operating hours, or by using the Service and Request Management Application on the CBRT User Group web site.</p>
Key consideration 4	An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts.

	The FMI should provide clear descriptions of priced services for comparability purposes.
Description	<p>Pricing tariff of the CBRT Payment Systems is determined on a yearly basis in accordance with the pricing policy and announced to participants at least one month before its entry into force. Pricing policy is disclosed to the public from the CBRT Payment Systems web site.</p> <p>The tariff structure specifies prices for the services of systems for each operation type (message fees, archive information requests, etc.) in a detailed and clear form. Message pricing does not contain any discount rates other than exceptions applied to some CBRT operations that are defined by related laws and regulations. On the other side, operations performed after official closing time of the system are subject to a penal tariff and rules to be applies on this case is also stated clearly in the tariff.</p>
Key consideration 5	An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.
Description	<p>The CBRT has already completed the self-assessment of the CBRT payment and securities settlement system. This self-assessment formed the basis of this present assessment. The results of assessment of the CBRT's Payment Systems against PFMI is intended to be disclosed to public in line with the PFMI Disclosure Framework in due course.</p> <p>The volume and value of payments settled in the CBRT Payment Systems are annually disclosed on the CBRT Payment Systems web site and updated regularly. In addition, Electronica Data Distribution System (EDDS) provides options for querying daily total values, average volume and amount data as graphs, tables or in a mode suitable for computerized processing.</p> <p>Additionally, on the CBRT Payment Systems User Group web site, which is only accessible to participants, participants can query data on the basis of participant or operations within a time period.</p> <p>Working principles, history and the interconnections of the system are accessible through the CBRT Payment Systems web site. The web site also contains useful knowledge such as legal basis of payment systems in Turkey (PSL), the importance of the payment systems and particularly their effect on the financial stability, goals and policies, information on the PFMI, central banks' role in the payment systems, payment systems in Turkey, international cooperation and information on international payments.</p> <p>The CBRT Payment Systems web site and the CBRT web site have both Turkish and English versions.</p>
Key conclusions	<p>Rules and procedures for the CBRT Payment Systems are defined clearly and shared with participants. System descriptions, system rules, general structure and workflows, summary statistics and pricing policy are disclosed to the public through the CBRT web page and the CBRT Payment Systems User Group web site.</p> <p>Pricing tariff is defined yearly based on pricing policy and disclosed to participants and to the public at least one month before its entry into force.</p>

	The CBRT is committed to publish the details of the assessment of the EFT system in line with the requirements of this principle and that would also include key aspects of the operating rules procedures.
Assessment of Principle 23	Observed
Recommendations and comments	The CBRT could as part of the publishing of disclosure framework also include key elements of the operating rules and procedures or alternatively consider publishing the PSOR or key elements of that separately.

PS	CSD	SSS	CCP	TR
				•

Principle 24: Disclosure of Market Data by Trade Repositories	
A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.	
Key consideration 1	A TR should provide data in line with regulatory and industry expectations to relevant authorities and the public, respectively, that is comprehensive and at a level of detail sufficient to enhance market transparency and support other public policy objectives.
Description	The EFT is a payment system and this principle is not applicable.
Key consideration 2	A TR should have effective processes and procedures to provide data to relevant authorities in a timely and appropriate manner to enable them to meet their respective regulatory mandates and legal responsibilities.
Description	The EFT is a payment system and this principle is not applicable.
Key consideration 3	A TR should have robust information systems that provide accurate current and historical data. Data should be provided in a timely manner and in a format that permits it to be easily analyzed.
Description	The EFT is a payment system and this principle is not applicable.
Key conclusions	The EFT is a payment system and this principle is not applicable.
Assessment of Principle 24	Not applicable
Recommendations and comments	

VI. DETAILED ASSESSMENT REPORT – ESTS

PS	CSD	SSS	CCP	TR
●	●	●	●	●

<p>Principle 1: Legal basis An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.</p>	
Key consideration 1	<p>The legal basis should provide a high degree of certainty for each material aspect of an FMI’s activities in all relevant jurisdictions.</p> <p><i>Material aspects and relevant jurisdictions</i></p> <p>The ESTS system is operated by the CBRT and functions as a CSD-cum-SSS for government securities and CBRT bills. All the system participants except the MKK, are banks licensed for operations in Turkey by the BRSA and fully subject to the laws of Turkey, including for its participation in the ESTS system. The MKK is regulated by the CMB and it was established in accordance with the provisions of the CML (Article 81).</p> <p>The ESTS is an integral part of the CBRT payment and securities settlement system and is closely integrated with the EFT system.</p> <p>The ESTS system is used to record the ownership of Government securities of the banks held with the CBRT. The retail investor and other non-bank institutional investors can buy the securities in the secondary market and their holdings are recorded in the MKK and the consolidated holdings are reflected as a combined holding of the MKK.</p> <p>In this arrangement the ESTS effectively functions as the issuer CSD and the MKK, the investor CSD.</p> <p>The Takasbank which functions as the SSS for the Government securities traded in the BIST, also holds sub-accounts of the banks and other investors. There is one consolidated omnibus account of the Takasbank with the ESTS and the sub-accounts are in the books of the Takasbank. The banks can move securities in their ESTS account to Takasbank either for collateral or for participation in the BIST or Takasbank money markets. The banks can also move their holdings to their accounts in MKK or as part of a sale to their customers account in MKK.</p> <p>The ESTS system by itself does not offer any liquidity support, however all participants except the MKK, can avail the liquidity support from the CBRT and through the inter-bank money markets. This is availed through the EFT system.</p> <p>The liquidity support facilities offered by the CBRT are all collateralized. The accepted collaterals are Turkish government securities, central bank bills and foreign collaterals – Eurobonds and sukuk securities. The liquidity support are: intra-day credit, overnight credit; 1-week repos; and, under the LOLR facilities.</p> <p>The inter-bank money markets are also collateralized and accepted collaterals include the once used for the CBRT liquidity support and in addition foreign currency and gold.</p>

The material aspects for the ESTS system faces the material risks described in the KC 1.1 of the EFT assessment. In addition the ESTS has the following additional material risk:

- Dematerialization
- Protection of customer assets

Legal basis for each material aspect

The legal basis for the material risks common to the EFT and ESTS are the same and are described in the KC 1.1. Here only the legal basis for dematerialization is covered.

Dematerialization

The Article 6 of the Public Finance and Debt Management Act, empowers the undersecretary of the treasury to conclude with the CBRT, the means and process for dematerialization and re-materialization of public debt securities. There was accordingly a decision by the Undersecretary on the 2nd November 2012, post which all government securities are dematerialized. The article 3 (p) of the CML explicitly defines the MKK as the agency created to dematerialized “capital market securities”. The definition of “capital market securities” in 3 article 3(p) encompasses government securities. This is further elaborated in the article 13 of the CML and further in the “Communique on principles and procedures for book keeping of dematerialized capital market instruments” issued by the CML.

Protection of customer assets

In the CML, the definition of capital market instruments (article 3) covers government securities. However article 136 of the CML, exempts the ESTS from the purview of the CML. Hence the communique of the CML related to CSDs also does not apply to the ESTS. The protection of customer assets held with the ESTS as a CSD or a participant in the ESTS, in the event of any impact to the operator or a participant, is not covered in the PSOR or any other legal measure covering the ESTS. However, articles in CML pertaining to segregation of assets of investors in investor firms (article 46, subarticles 5 and 6) appears to be applicable to Takasbank. Investor firms as defined in article 3(v) of the CML and investment services as defined in article 37 (g and g[^]) encompass the activities of Takasbank as a SSS. With respect to the holdings of banks in the CBRT, as a central bank, this is not necessarily a concern. However, for the securities held in the books of the Takasbank in the name of the institutional investors and banks, this results in there being ambiguity about explicit legal protection for the protection of their assets.

The protection of participant’s collateral from insolvency of an FMI or the particular counterparty however is covered through the relevant provisions related to protection of collateral in the PSL and also the CML. Further the CMB regulations pertaining to repo and reverse repo classify the securities used for repo and reverse repo as collateral lodged with the lender.

Key consideration 2	An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.
Description	<p>The PSOR constitutes the rules and procedures of the ESTS system. The PSOR and detailed description of the process and technical aspects are presented as annexes to the participation contract signed by all participants. As noted earlier the article 3 of the participation contract makes the annexes an integral part of the contract.</p> <p>Copies of the participation contract and the PSOR are delivered to the participants at their application. The CBRT has the authority to make additional regulations on operational details (PSOR, Art 13).</p> <p>As per the internal procedures of the CBRT, the CBRT Executive Committee approves changes to the Rule Book. All changes are announced to all participants in advance.</p> <p>The Article 3 of the PSOR lays out the legal basis for the PSOR as deriving from article 4 of the CBRT law and article 4 and 7 of the PSL. The PSOR provisions are consistent with these provisions and further are consistent with the Article 7 of the ROPSS. This consistency is also assessed through the payment systems oversight activities of the CBRT.</p>
Key consideration 3	An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.
Description	<p>The Article 3 of the PSOR lays out the legal basis for the PSOR as deriving from article 4 of the CBRT law and article 4 and 7 of the PSL.</p>
Key consideration 4	An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.
Description	<p><i>Enforceability of rules, procedures and contracts</i></p> <p>Same as in the KC 1.4 for the EFT system.</p> <p><i>Degree of certainty for rules and procedures</i></p> <p>Same as in the KC 1.4 for the EFT system.</p>
Key consideration 5	An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.
Description	<p>All the participants in the ESTS system are subject to Turkish laws and regulations.</p>
Key conclusions	<p>The ESTS functions as the CSD-cum-SSS for Government securities and CBRT bills. The MKK is the investor CSD for government securities for non-bank institutional and retail investors.</p>

	<p>The legal basis for the ESTS comprises the CBRT law, the PSL and specific regulations pertaining to operations and oversight. CBRT as the operator the PSL has developed detailed operating and procedures – the PSOR. The participants are required to sign a participation contract which binds them to the PSOR. The participation contract and the PSOR have a sound legal basis. All material legal aspects are adequately covered in the PSL and the CBRT law. All participants of the EFT system are subject to Turkish laws and regulations; and all operations are also performed in Turkey.</p> <p>The legal basis for Dematerialization is covered using a combination of the Public Debit Management Law, the CML and the communique on dematerialization issued by the CML.</p> <p>The PSOR and participation contract and other related contractual aspects are vetted by the CBRT legal department and by the executive committee.</p> <p>The legal protection for the securities and assets of the investors held in the books of Takasbank, is covered as part of provisions in the CML pertaining to investment firms and services.</p>
Assessment of Principle 1	Observed
Recommendations and comments	<p>The CBRT should review the legal and regulatory framework for the protection of customer assets held by Takasbank, including perhaps seeking external opinion and implement specific amendments or additional measures to address any gaps if identified.</p> <p>In case it is determined that there is indeed a legal gap, the CBRT in co-ordination with the CMB could collectively consider the following options:</p> <ul style="list-style-type: none"> - Takasbank could be licensed as a CSD (it already holds a license as a SSS, a limited purpose bank and a CCP), in which the measures related to protection of customer assets in MKK would become applicable for Takasbank as well; - Classify Takasbank as a participant with underlying participants (institutional investors) being termed as “indirect participants” in a sort of tiering arrangement or perhaps as a custodian; and further having separate accounts of Takasbank in the ESTS – one for its proprietary holdings and another for its holdings as a SSS; - Divesting Takasbank of this role and transferring all such customer accounts- specifically institutional investor accounts to MKK (which in any case is already performing this function), with holdings of banks continuing to be reflected in ESTS; or - Specifically amending the relevant statutes to effect protection to customer assets in case of bankruptcy of Takasbank.

PS ●	CSD ●	SSS ●	CCP ●	TR ●
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Principle 2: Governance	
An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.	
Key consideration 1	An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations
Description	The ESTS is an integral part of the CBRT payment and securities settlement systems and the governance arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.
Key consideration 2	An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.
Description	<p><i>Governance arrangements</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the governance arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p> <p><i>Disclosure of governance arrangements</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the governance arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p> <p>.</p>
Key consideration 3	The roles and responsibilities of an FMI's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.
Description	<p><i>Roles and responsibilities of the board</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the governance arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p> <p><i>Review of performance</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the governance arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p>
Key consideration 4	The board should contain suitable members with the appropriate skills and incentives to fulfill its multiple roles. This typically requires the inclusion of non-executive board member(s).

Description	The ESTS is an integral part of the CBRT payment and securities settlement systems and the governance arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.
Key consideration 5	The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.
Description	<p><i>Roles and responsibilities of management</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the governance arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p> <p><i>Experience, skills and integrity</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the governance arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p>
Key consideration 6	The board should establish a clear, documented risk-management framework) that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.
Description	<p><i>Risk management framework</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the governance arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p> <p><i>Authority and independence of risk management and audit functions</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the governance arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p>
Key consideration 7	The board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.

Description	<p><i>Identification and consideration of stakeholder interests</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the governance arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p> <p><i>Disclosure</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the governance arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p>
Key conclusions	<p>This principle is assessed taking into account the considerations for FMIs operated by central banks as stated both in the PFMIs and in Application of the Principles for financial market infrastructures to central bank FMIs.²⁷</p> <p>The objectives and policies of the CBRT regarding Payment and Securities Settlement Systems place a high priority on stability, safety and efficiency. The CBRT has a documented governance arrangements for the institution as a whole that define clear and direct lines of responsibility and accountability. The same governance framework has been applied for the EFT system as well, as a core responsibility of the PSD.</p> <p>There is a risk management framework for the CBRT operated payment systems. There is an existing process of auditing departmental risk management framework, however the PSD’s risk management framework has not been audited yet.</p> <p>Mechanisms exist for involving stakeholders in decision-making process, and the CBRT effectively communicates with the stakeholders through different channels.</p>
Assessment of Principle 2	Observed
Recommendations and comments	<p>The CBRT could consider including objectives relating to efficiency and effectiveness of the ESTS system and satisfaction levels of the participants, in the performance objectives and indicators for the PSD.</p>

PS ●	CSD ●	SSS ●	CCP ●	TR ●
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<p>Principle 3: Framework for the comprehensive management of risks</p> <p>An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.</p>	
Key consideration 1	An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the

²⁷ Application of the Principles for financial market infrastructures to central bank FMIs, CPMI-IOSCO, August 2015. (www.bis.org/cpmi/publ/d130.htm)

	<p>range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.</p>
<p>Description</p>	<p><i>Risks that arise in or are borne by the FMI</i></p> <p>The ESTS functions as a CSD-cum-SSS for government securities and CBRT securities holdings of banks held with the CBRT. The ESTS settles in DVP mode, using DVP model 1 for both the primary market and secondary market transactions. The funds leg are settled in the EFT system. The liquidity support for the EFT system is external to the EFT system and seen as part of the monetary policy instruments of the CBRT. For the purposes of this principle, the risks associated with the intra-day liquidity support provision of the CBRT are also being considered.</p> <p>The ESTS has a link with the MKK. The ESTS functions as the issuer CSD and the MKK as the investor CSD. The link is used by banks for moving their securities holdings to the MKK for use in the inter-bank money markets and secondary market trades or for transferring securities to their customers account in the MKK. In general, however the participants move their securities to Takasbank’s account in the ESTS for participation in the secondary market.</p> <p>The risks that the ESTS system is exposed to and could pose to its participants and other FMIs are, the same as that of the EFT system:</p> <ul style="list-style-type: none"> • Legal Risk • Credit Risk • Liquidity Risk • Operational Risk • Custody and Investment Risk <p>In addition, the risks arising from the ESTS - MKK and also the ESTS-Takasbank link also needs to be considered.</p> <p>The ESTS as a CSD-cum-SSS is critical to contain and limit systemic risk. As the ESTS is owned and operated by the CBRT, the general business risks are not considered as a material risk.</p> <p><i>Risk management policies, procedures and systems</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the risk management arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p> <p><i>Review of risk management policies, procedures and systems</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the risk management arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p>

Key consideration 2	An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.
Description	The ESTS is an integral part of the CBRT payment and securities settlement systems and the risk management arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.
Key consideration 3	An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.
Description	<p><i>Material risks</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the risk management arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p> <p><i>Risk management tools</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the risk management arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p> <p>.</p>
Key consideration 4	An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.
Description	<p><i>Scenarios that may prevent an FMI from providing critical operations and services</i></p> <p>The ESTS is an integral part of the CBRT payment and securities settlement systems and the risk management arrangements for the ESTS system are the same as for the EFT system, as described in the EFT assessment.</p> <p><i>Recovery or orderly wind-down plans</i></p> <p>The ESTS is owned and operated by the CBRT, given this the recovery and wind-down plans are not applicable, as noted in the PFMI and the CPMI-IOSCO publication on application of PFMI to central bank operated FMIs.</p>
Key conclusions	The PSD has developed a risk management framework based on the ISO 31000 framework. The risk management framework covers the specific

	<p>risks outlined in the PFMIs. The framework is reviewed annually and is also subject to audit by the CBRT audit committee.</p> <p>The PSOR provides adequate powers to the CBRT to ensure conformance to the operating and security procedures outlined in the PSOR.</p> <p>The PSD has mechanisms in place for measuring and monitoring specific aspects of liquidity risk and operational reliability of the EFT system.</p> <p>The risk management framework is however internally focused and does not explicitly take into account the dependencies on other FMIs and also internal systems of the CBRT. In particular, the operations of the EFT system has a heavy dependence on the Takasbank and the CBRT markets department. Takasbank is the SSS for the inter-bank markets which is a major source of the liquidity used in the EFT system. The Markets Department is the decision maker on the provision of the CBRT liquidity support facilities and also has its own systems and processes.</p> <p>This risk however is to an extent mitigated as the Takasbank and other FMIs are subject to the oversight of the CBRT and the Markets department also has its own risk management framework.</p> <p>The ESTS has a link, as the issuer CSD with the MKK which acts as the investor CSD. The risks posed by ESTS to the MKK needs to be taken into account in the risk management framework.</p> <p>In addition, there is also a link between the ESTS and Takasbank arising from the way the securities transfers related to the money market and secondary market transactions on Government securities are structured. The risks arising from this link also need to be considered.</p>
<p><i>Assessment of Principle 3</i></p>	<p>Broadly Observed.</p>
<p><i>Recommendations and comments</i></p>	<p>The CBRT payment and securities settlement systems should include its dependencies on other FMIs and also the internal dependencies for the ESTS system in the risk management framework for the CBRT payment and securities settlement systems.</p>

PS ●	CSD	SSS ●	CCP ●	TR
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Principle 4. Credit risk

An FMI should effectively measure, monitor, and manage its credit exposure to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two largest participants and their affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions. All other CCPs should maintain, at a minimum, total financial resources sufficient to cover the default of the one participant and its affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions.

Key consideration 1

The following key consideration applies to	PS ●	CSD	SSS ●	CCP ●	TR
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An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.

Description

The ESTS functions as a CSD-cum-SSS. The EFT system is used for the funds leg of the settlement. The EFT system functions as a RTGS system. Participants can seek liquidity support from the CBRT, subject to an overall “borrowing limit” against collaterals and from the inter-bank money markets, Takasbank cash credit facility and using pre-arranged credit lines with other participants.

The ESTS system settles securities settlement in DVP mode using DVP model 1. The only scope of credit risk comes from the credit risk associated with the liquidity provision in the EFT system for the funds settlement leg.

The credit risk management framework for the ESTS with respect to the risk related to liquidity provision is the same as for the EFT system, as described in this principle for the EFT system.

Key consideration 2

An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.

Description

The following key consideration applies to	PS ●	CSD	SSS ●	CCP ●	TR
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	<p>The credit risk management framework for the ESTS is the same as for the EFT system, as described in this principle for EFT system.</p>						
<p>Key consideration 3</p>	<table border="1"> <tr> <td>The following key consideration applies to</td> <td>PS ●</td> <td>CSD</td> <td>SSS ●</td> <td>CCP</td> <td>TR</td> </tr> </table> <p>A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.</p>	The following key consideration applies to	PS ●	CSD	SSS ●	CCP	TR
The following key consideration applies to	PS ●	CSD	SSS ●	CCP	TR		
<p>Description</p>	<p><i>Coverage of exposures to each participant</i></p> <p>The credit risk management framework for the ESTS is the same as for the EFT system, as described in this principle for EFT system.</p> <p><i>For DNS payment systems and DNS SSSs in which there is no settlement guarantee</i></p> <p>The ESTS functions in DVP model 1 and this KC is hence not applicable.</p>						
<p>Key consideration 4</p>	<table border="1"> <tr> <td>The following key consideration applies to</td> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP ●</td> <td>TR</td> </tr> </table> <p>A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6 on margin). In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and</p>	The following key consideration applies to	PS	CSD	SSS	CCP ●	TR
The following key consideration applies to	PS	CSD	SSS	CCP ●	TR		

	<p>its affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. In all cases, a CCP should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.</p>						
Description	<p><i>Coverage of current and potential future exposures to each participant</i></p> <p>Not applicable as ESTS is a CSD-cum-SSS and this KC is hence not applicable.</p> <p><i>Risk profile and systemic importance in multiple jurisdictions</i></p> <p>Not applicable as ESTS is a CSD-cum-SSS and this KC is hence not applicable.</p> <p><i>Additional financial resources</i></p> <p>Not applicable as ESTS is a CSD-cum-SSS and this KC is hence not applicable.</p> <p><i>Supporting rationale and governance arrangements</i></p> <p>Not applicable as ESTS is a CSD-cum-SSS and this KC is hence not applicable.</p>						
Key consideration 5	<table border="1"> <tr> <td>The following key consideration applies to</td> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP ●</td> <td>TR</td> </tr> </table> <p>A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A CCP should have clear procedures to report the results of its stress tests to appropriate decision makers at the CCP and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined parameters and assumptions. On at least a monthly basis, a CCP should perform a comprehensive and thorough analysis of stress testing scenarios, models, and underlying parameters and assumptions used to ensure they are appropriate for determining the CCP’s required level of default protection in light of current and evolving market conditions. A CCP should perform this analysis of stress testing more frequently when the products cleared or markets served display high volatility, become less liquid, or when the size or concentration of positions held by a CCP’s participants increases significantly. A full validation of a CCP’s risk-management model should be performed at least annually.</p>	The following key consideration applies to	PS	CSD	SSS	CCP ●	TR
The following key consideration applies to	PS	CSD	SSS	CCP ●	TR		

Description	<p><i>Stress testing</i></p> <p>Not applicable as ESTS is a CSD-cum-SSS and this KC is hence not applicable.</p> <p><i>Review and validation</i></p> <p>Not applicable as ESTS is a CSD-cum-SSS and this KC is hence not applicable.</p>												
Key consideration 6	<table border="1"> <tr> <td>The following key consideration applies to</td> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">●</td> <td></td> </tr> </table> <p>In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters’ positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.</p>	The following key consideration applies to	PS	CSD	SSS	CCP	TR					●	
The following key consideration applies to	PS	CSD	SSS	CCP	TR								
				●									
Description	<p>Not applicable as ESTS is a CSD-cum-SSS and this KC is hence not applicable.</p>												
Key consideration 7	<table border="1"> <tr> <td>The following key consideration applies to</td> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td style="text-align: center;">●</td> <td></td> <td style="text-align: center;">●</td> <td style="text-align: center;">●</td> <td></td> </tr> </table> <p>An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI’s process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.</p>	The following key consideration applies to	PS	CSD	SSS	CCP	TR		●		●	●	
The following key consideration applies to	PS	CSD	SSS	CCP	TR								
	●		●	●									
Description	<p><i>Allocation of credit losses</i></p> <p>The credit risk management framework for the ESTS is the same as for the EFT system, as described in this principle for EFT system.</p> <p><i>Replenishment of financial resources</i></p>												

	The credit risk management framework for the ESTS is the same as for the EFT system, as described in this principle for EFT system.
Key conclusions	<p>The ESTS uses the EFT system for the settlement of the funds leg. The credit risk in the EFT stems from the CBRT liquidity support operations to the participants. The liquidity support operations are not integrated into the EFT system and as such are handled by the markets department. The credit risk is considered as part of the EFT risk management framework, but the full treatment of the credit risk from liquidity support operations is in the domain of the markets department.</p> <p>The markets department's credit risk management framework includes instituting overall borrowing limits, requiring all credit facilities to be collateralized with good quality securities, and applying haircuts. The collaterals are re-valued daily and the CBRT has the rights to ask for additional collateral when there is an adverse movement.</p>
Assessment of Principle 4	Observed.
Recommendations and comments	The credit risk management framework of the Markets department of the CBRT should be more fully integrated in to the risk management framework of the CBRT payment and securities settlement systems.

PS	CSD	SSS	CCP	TR
●		●	●	

Principle 5. Collateral	
An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.	
Key consideration 1	An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.
Description	The ESTS is a CSD-cum-SSS. The ESTS uses the EFT system for the settlement of funds leg in DVP mode using DVP model 1. The collateral management framework for the ESTS is the same as for the EFT system, as described in this principle for EFT system.
Key consideration 2	An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.
Description	<p><i>Valuation practices</i></p> <p>The collateral management framework for the ESTS is the same as for the EFT system, as described in this principle for EFT system.</p> <p><i>Haircutting practices</i></p>

	The collateral management framework for the ESTS is the same as for the EFT system, as described in this principle for EFT system.
Key consideration 3	In order to reduce the need for pro-cyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.
Description	The collateral management framework for the ESTS is the same as for the EFT system, as described in this principle for EFT system.
Key consideration 4	An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.
Description	The collateral management framework for the ESTS is the same as for the EFT system, as described in this principle for EFT system.
Key consideration 5	An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.
Description	The collateral management framework for the ESTS is the same as for the EFT system, as described in this principle for EFT system.
Key consideration 6	An FMI should use a collateral management system that is well-designed and operationally flexible.
Description	<p><i>Collateral management system design</i></p> <p>The collateral management framework for the ESTS is the same as for the EFT system, as described in this principle for EFT system</p> <p><i>Operational flexibility</i></p> <p>The collateral management framework for the ESTS is the same as for the EFT system, as described in this principle for EFT system.</p>
Key conclusions	<p>The ESTS functions as a CSD-cum-SSS and uses the EFT system for the settlement of the funds leg in DVP mode, using DVP model 1.</p> <p>The collateral management system and processes are external to the EFT and ESTS system and are managed by the CBRT markets department. The extension of liquidity support is considered a monetary policy instrument. The choice of securities, haircut rates, valuation practices and operational arrangements are an integral part of the CBRT monetary policy operations. The collateral is managed in the ESTS system and in some sense it plays parts of the role of a collateral management system.</p> <p>The CBRT maintains a list of eligible securities and their haircut rates. The haircut rates depend on the securities, participant and</p>

	concentration. The eligible securities are government securities and foreign currency held with the CBRT.
Assessment of Principle 5	Observed.
Recommendations and comments	Same as that for the assessment of principle 5 of the EFT system.

PS	CSD	SSS	CCP	TR
			●	

Principle 6. Margin	
A CCP should cover its exposure to its participants for all products through an effective margin system that is risk-based and regularly reviewed.	
Key consideration 1	A CCP should have a margin system that establishes margin levels commensurate with the risks and particular attributes of each product, portfolio, and market it serves.
Description	<p><i>Description of margin methodology</i></p> <p>The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.</p> <p><i>Credit exposures</i></p> <p>The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.</p> <p><i>Operational components</i></p> <p>The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.</p>
Key consideration 2	A CCP should have a reliable source of timely price data for its margin system. A CCP should also have procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.
Description	<p><i>Sources of price data</i></p> <p>The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.</p> <p><i>Estimation of prices</i></p> <p>The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.</p>
Key consideration 3	A CCP should adopt initial margin models and parameters that are risk-based and generate margin requirements sufficient to cover its potential future exposure to participants in the interval

	<p>between the last margin collection and the close out of positions following a participant default. Initial margin should meet an established single-tailed confidence level of at least 99 percent with respect to the estimated distribution of future exposure. For a CCP that calculates margin at the portfolio level, this requirement applies to each portfolio's distribution of future exposure. For a CCP that calculates margin at more-granular levels, such as at the sub-portfolio level or by product, the requirement must be met for the corresponding distributions of future exposure. The model should (a) use a conservative estimate of the time horizons for the effective hedging or close out of the particular types of products cleared by the CCP (including in stressed market conditions), (b) have an appropriate method for measuring credit exposure that accounts for relevant product risk factors and portfolio effects across products, and (c) to the extent practicable and prudent, limit the need for destabilising, procyclical changes.</p>
Description	<p><i>Initial margin model</i></p> <p>The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.</p> <p><i>Closeout and sample periods</i></p> <p>The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.</p> <p><i>Procyclicality and specific wrong-way risk</i></p> <p>The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.</p>
Key consideration 4	<p>A CCP should mark participant positions to market and collect variation margin at least daily to limit the build-up of current exposures. A CCP should have the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants.</p>
Description	<p>The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.</p>
Key consideration 5	<p>In calculating margin requirements, a CCP may allow offsets or reductions in required margin across products that it clears or between products that it and another CCP clear, if the risk of one product is significantly and reliably correlated with the risk of the other product. Where two or more CCPs are authorised to offer cross-margining, they must have appropriate safeguards and harmonised overall risk-management systems.</p>
Description	<p><i>Portfolio margining</i></p>

	<p>The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.</p> <p><i>Cross-margining</i></p> <p>The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.</p> <p><i>Robustness of methodologies</i></p> <p>The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.</p>
Key consideration 6	A CCP should analyse and monitor its model performance and overall margin coverage by conducting rigorous daily backtesting – and at least monthly, and more-frequent where appropriate, sensitivity analysis. A CCP should regularly conduct an assessment of the theoretical and empirical properties of its margin model for all products it clears. In conducting sensitivity analysis of the model’s coverage, a CCP should take into account a wide range of parameters and assumptions that reflect possible market conditions, including the most-volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices.
Description	<p><i>Backtesting and sensitivity analysis</i></p> <p>The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.</p> <p><i>Margin model performance</i></p> <p>The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.</p>
Key consideration 7	A CCP should regularly review and validate its margin system.
Description	The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.
<i>Key conclusions</i>	The ESTS is a CSD-cum-SSS and this KC and principle are not applicable.
<i>Assessment of Principle 6</i>	Not Applicable
<i>Recommendations and comments</i>	

PS ●	CSD	SSS ●	CCP ●	TR
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Principle 7: Liquidity risk

An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.

Key consideration 1

PS ●	CSD	SSS ●	CCP ●	TR
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An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.

Description

The ESTS uses the EFT system for the settlement of the funds leg, and uses the same liquidity risk management mechanisms of the EFT system.

The liquidity risk management framework for the ESTS system is the same as for the EFT system, as described in the assessment for this principle in the EFT system.

Key consideration 2

PS ●	CSD	SSS ●	CCP ●	TR
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An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.

Description

The liquidity risk management framework for the ESTS system is the same as for the EFT system, as described in the assessment for this principle in the EFT system.

Key consideration 3

PS ●	CSD	SSS ●	CCP	TR
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A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate

	the largest aggregate payment obligation in extreme but plausible market conditions.										
Description	The liquidity risk management framework for the ESTS system is the same as for the EFT system, as described in the assessment for this principle in the EFT system.										
Key consideration 4	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td></td> <td></td> <td>●</td> <td></td> </tr> </table> <p>A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments, and meet other payment obligations on time with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions.</p>	PS	CSD	SSS	CCP	TR				●	
PS	CSD	SSS	CCP	TR							
			●								
Description	<p><i>Sufficient liquid resources</i></p> <p>The ESTS functions as a CSD-cum-SSS, hence this KC is not applicable.</p> <p><i>Risk profile and systemic importance in multiple jurisdictions</i></p> <p>The ESTS functions as a CSD-cum-SSS, hence this KC is not applicable.</p>										

Key consideration 5	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td>●</td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> </table> <p>For the purpose of meeting its minimum liquid resource requirement, an FMI’s qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.</p>	PS	CSD	SSS	CCP	TR	●		●	●	
PS	CSD	SSS	CCP	TR							
●		●	●								
Description	<p><i>Size and composition of qualifying liquid resources & Availability and coverage of qualifying liquid resources</i></p> <p>The liquidity risk management framework for the ESTS system is the same as for the EFT system, as described in the assessment for this principle in the EFT system.</p>										
Key consideration 6	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td>●</td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> </table> <p>An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as a part of its liquidity plan.</p>	PS	CSD	SSS	CCP	TR	●		●	●	
PS	CSD	SSS	CCP	TR							
●		●	●								
Description	<p><i>Size and composition of supplemental liquid resources</i></p> <p>As noted the CBRT as the central bank of issue is not constrained in TRY liquidity.</p> <p><i>Availability of supplemental liquid resources</i></p>										

	As noted the CBRT as the central bank of issue is not constrained in TRY liquidity.										
Key consideration 7	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td>●</td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> </table> <p>An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider’s performance reliability with respect to a particular currency, a liquidity provider’s potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.</p>	PS	CSD	SSS	CCP	TR	●		●	●	
PS	CSD	SSS	CCP	TR							
●		●	●								
Description	<p><i>Use of liquidity providers</i></p> <p>The liquidity risk management framework for the ESTS system is the same as for the EFT system, as described in the assessment for this principle in the EFT system.</p> <p><i>Reliability of liquidity providers</i></p> <p>The liquidity risk management framework for the ESTS system is the same as for the EFT system, as described in the assessment for this principle in the EFT system.</p>										
Key consideration 8	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td>●</td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> </table> <p>An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.</p>	PS	CSD	SSS	CCP	TR	●		●	●	
PS	CSD	SSS	CCP	TR							
●		●	●								
Description	<p>The liquidity risk management framework for the ESTS system is the same as for the EFT system, as described in the assessment for this principle in the EFT system.</p>										
Key consideration 9	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td>●</td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> </table> <p>An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its</p>	PS	CSD	SSS	CCP	TR	●		●	●	
PS	CSD	SSS	CCP	TR							
●		●	●								

	<p>stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.</p>										
Description	<p><i>Stress test programme</i></p> <p>The liquidity risk management framework for the ESTS system is the same as for the EFT system, as described in the assessment for this principle in the EFT system.</p> <p><i>Stress test scenarios</i></p> <p>The liquidity risk management framework for the ESTS system is the same as for the EFT system, as described in the assessment for this principle in the EFT system.</p> <p><i>Review and validation</i></p> <p>The liquidity risk management framework for the ESTS system is the same as for the EFT system, as described in the assessment for this principle in the EFT system.</p>										
Key consideration 10	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td>●</td> <td></td> <td>●</td> <td>●</td> <td></td> </tr> </table> <p>An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ</p>	PS	CSD	SSS	CCP	TR	●		●	●	
PS	CSD	SSS	CCP	TR							
●		●	●								

	during a stress event, so that it can continue to operate in a safe and sound manner.
Description	<p><i>Same day settlement</i></p> <p>The liquidity risk management framework for the ESTS system is the same as for the EFT system, as described in the assessment for this principle in the EFT system.</p> <p><i>Replenishment of liquidity resources</i></p> <p>The liquidity risk management framework for the ESTS system is the same as for the EFT system, as described in the assessment for this principle in the EFT system.</p>
Key Conclusions	<p>The ESTS system uses the EFT system for the settlement of the funds leg in DVP mode, using DVP model 1.</p> <p>The EFT system is structured as a RTGS system. Unsettled transactions are cancelled at the end of the day.</p> <p>The CBRT as the operator of the EFT system, by itself is not constrained in TRY liquidity. However the participants could face liquidity shortages. The participants have access to liquidity support from the CBRT and the inter-bank money markets. These liquidity options are collateralized and in the case of the CBRT liquidity support there is an overall borrowing limit for the participant.</p> <p>There is a marked trend of settlements being bunched closer to the end of the day, with over 60% of the transactions settling post 2 PM and 35% post 4 PM.</p>
Assessment of Principle 7	Broadly Observed.
Recommendations and comments	<p>The risk management framework of the EFT system could consider daily and periodic analysis of the liquidity risk jointly by the PSD and Markets departments of the CBRT. There could be additional indicators like estimate of participants available both from the CBRT and also the inter-bank money markets. This could build on the framework being established by the BRSA on liquidity risk.</p> <p>The CBRT could consider encouraging earlier settlements in the inter-bank money markets to allow for more liquidity to flow into the EFT system earlier.</p> <p>The CBRT as part of the ongoing review of its current policy on liquidity risk, analyze and implement suitable options to make intra-day liquidity support by the CBRT more attractive to the participants and implement suitable options.</p>

	<p>The CBRT could evaluate if pricing policies could incentivize earlier settlement perhaps as part of overall throughput guidelines and accordingly implement them.</p> <p>The CBRT has an existing practice of not assigning priorities and leaving it to the participants in view of the practice of closely monitor their liquidity. However in view of the liquidity risks being externalized by the buyer side, the CBRT could evaluate in coordination with participants the automatic assigning of the highest queue priority for the DVP settlements emanating from the ESTS system.</p>
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PS	CSD	SSS	CCP	TR
●		●	●	

<p>Principle 8: Settlement finality</p> <p>An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time</p>	
Key consideration 1	An FMI’s rules and procedures should clearly define the point at which settlement is final.
Description	<p><i>Point of settlement finality</i></p> <p>The Article 10 of the PSL establishes settlement finality and irrevocability for systems designated by the CBRT (Art 11). The CBRT has designated the EFT, RPS and the ESTS in the official gazette and accordingly the provisions of article 10 of the PSL covers the EFT system.</p> <p>Article 10(1) of the PSL uses the term “transfer order”, requires the point of time when a transaction become irrevocable, the time of entry and time when a settlement of a transfer order is final, to be defined in the operating rules of the system. Article 10(3) of the PSL further elaborates that any decisions taken under any other law regarding any transaction orders would be valid only for transactions that enter the system after the system operator has been notified. Article 10 (4) of the PSL covers systems using netting process and makes the provisions of article 10 (3) allow transaction orders that entered the system before the system operator was notified of any legal decision, to be included in the netting process.</p> <p>The PSOR has defined irrevocability as the time when the settlement accounts have been debited or credited (art 8) and this is also considered the time when the settlement is final. Article 7(3) of the PSOR further defines that the “server time” recorded in relevant timestamps as the time that will be used for recording time of entry, irrevocability and finality.</p> <p>The term “transfer order” as defined in the PSL encompasses securities transfer and hence the provisions also apply to the DVP settlements involving the securities settlements in the EFT system. The Article 9.1.b of the PSOR specifies that under DVP settlement the securities transfer and</p>

	<p>the funds transfer for a securities settlement transaction would be carried out simultaneously.</p> <p>The PSL is available on the CBRT website and also in gazette. The PSOR is available to the participants and also as part of the application process to become a participant.</p> <p><i>Finality in the case of links</i></p> <p>As noted earlier, the ESTS has a link with the MKK system. This link is used to transfer the securities holdings of banks in the ESTS system to the MKK system and vice-versa. The CBRT has developed a mechanism for using this link for sale of securities belonging to a bank in the secondary market, however the reverse is not allowed.</p> <p>The MKK has an account in the ESTS to record the consolidated holdings of all its participants and their customers. A transfer of securities by a bank from its holding in the ESTS to MKK and vice-versa, is processed as a free-of-payment transfer in the ESTS. The reflections of the transfers in the MKK system is based on a message flow from and to the ESTS system.</p> <p>For a sale of securities holdings of a bank to another participant in the inter-bank money markets is processed as a DVP transaction in the ESTS system and the securities transferred from the ESTS holding of the bank to the MKK's consolidated holding in the ESTS. A message is triggered from the ESTS to the MKK to convey the completion of the transfer.</p> <p>The operations beyond the ESTS are handled by the MKK as free-of-payment transfer. Purchase of securities in the inter-bank money markets for deposit in the ESTS is not allowed and it will need to be done in two steps. The first step for purchasing in the inter-bank money markets and then the free-of-payment transfer from MKK's account in the ESTS to the buying participants account in the ESTS.</p> <p>However, as per current market practice, for inter-bank money markets, the practice is to transfer securities to Takasbank's account in the ESTS. The SSS functions for the Takasbank related markets are handled by the Takasbank. All transfers between ESTS and Takasbank are free-of-payment transfers.</p>
<p>Key consideration 2</p>	<p>An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.</p>
<p>Description</p>	<p><i>Final settlement on the value date</i></p> <p>The ESTS system settles in DVP mode, using DVP model 1. The funds leg are settled in the EFT system. The EFT system is structured as a RTGS system and all settlements are final as noted in the KC 1.</p> <p><i>Intraday or real-time final settlement</i></p>

	The ESTS system settles in DVP mode, using DVP model 1. Participants can track the status of their operations in real-time through reporting facilities provided by the system.
Key consideration 3	An FMI should clearly define the point after which unsettled payments, transfer instructions, or other obligations may not be revoked by a participant.
Description	In ESTS, securities selling operations that are performed in DvP principle are initiated by the seller. The buyer is notified and sends a buy request after the seller starts the operation. The seller can only cancel the transfer order before the funds leg is settled. Once payment is settled, the securities transfer is also settled and DVP operation cannot be revoked by seller or buyer. This is detailed in the article 8 of the PSOR. Participants can request for extension of operating hours on a particular day. Extensions request are made on phone and extensions granted are communicated to all participants. Extensions up to 15 minutes are to be authorized by the EFT operations head, beyond 15 minutes and up to 1 hour requires the approval of the ED of the PSD. Extensions beyond that require approval of a Deputy Governor of the CBRT.
Key conclusions	The ESTS settles in DVP mode using DVP model 1. The funds leg are settled in the EFT system. The EFT functions as a RTGS system with final settlement through the day. Settlement finality is protected in the PSL and clearly articulated in the PSOR and as such has a sound legal basis. The ESTS has a link with MKK for free-of-payment transfer of banks securities holdings in the ESTS to MKK. The MKK maintains a consolidated account in the ESTS to reflect the securities holdings of its participants in its books. The transfer from ESTS to MKK and vice-versa happens in DVP mode for sale and as a book entry transfer for the free-of-payment transfers.
Assessment of Principle 8	Observed.
Recommendations and comments	

PS	CSD	SSS	CCP	TR
●		●	●	

Principle 9: Money settlements	
An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimize and strictly control the credit and liquidity risk arising from the use of commercial bank money.	
Key consideration 1	An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.
Description	The EST system settles in the books of the CBRT and as such uses central bank money.

Key consideration 2	If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.
Description	The ESTS system settles in the books of the CBRT and as such uses central bank money.
Key consideration 3	If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.
Description	The ESTS system settles in the books of the CBRT and as such uses central bank money.
Key consideration 4	If an FMI conducts money settlements on its own books, it should minimize and strictly control its credit and liquidity risks.
Description	The ESTS system settles in the books of the CBRT and as such uses central bank money.
Key consideration 5	An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.
Description	The ESTS system settles in the books of the CBRT and as such uses central bank money.
Key conclusions	The ESTS system settles in the books of the CBRT and as such uses central bank money.
Assessment of Principle 9	Observed.
Recommendations and comments	

PS	CSD ●	SSS ●	CCP ●	TR
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Principle 10: Physical Deliveries	
An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.	
Key consideration 1	An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.
Description	<p>Securities including government debt securities are processed in book entry form in the ESTS. There are two banks which are not participants of the ESTS system, their ownership of securities is recorded in their accounts in the CBRT Ankara and Istanbul branch, outside of the ESTS. For this purpose, their securities kept in ESTS are recorded as holdings of CBRT branches.</p> <p>Although, physical printing and delivery of securities have been possible previously, with the decision by Prime Minister Undersecretariat of Treasury dated the November 2nd of 2012, the printing and rematerialisation of government debt securities ended.</p> <p>On November 11th of 2012, the CBRT announced via an instruction that the printing of the government securities was terminated from that point and the regulations related with securities' printing have been updated appropriately.</p> <p>With the redemption of the latest printed securities, there are now no printed government debt securities since July 2013.</p>
Key consideration 2	An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.
Description	<p>Since government debt securities are not printed and they are kept only in dematerialised form, there is no risk associated with the storage and delivery of physical instruments or commodities.</p>
Key conclusions	<p>In ESTS, securities are dematerialised and processed in book entry form. Although it was possible to rematerialize and physically deliver the securities previously, as of November 2012 physical printing of government debt securities has been terminated. With the redemption of latest printed securities, there have been no printed government debt securities since July 2013.</p> <p>Since government debt securities are only in dematerialised form, there is no risk associated with the storage and delivery of physical instruments and as such this principle is not applicable for ESTS.</p>
Assessment of Principle 10	Not Applicable
Recommendations and comments	

PS	CSD •	SSS	CCP	TR
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Principle 11: Central Securities Depositories

A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.

Key consideration 1

A CSD should have appropriate rules, procedures, and controls, including robust accounting practices, to safeguard the rights of securities issuers and holders, prevent the unauthorised creation or deletion of securities, and conduct periodic and at least daily reconciliation of securities issues it maintains.

Description

The ESTS functions as the CSD for government securities and CBRT bills. The ESTS participants are banks and only their proprietary holdings are held in the ESTS. Banks also hold these securities in the MKK and so do individual and institutional investors. The MKK records these holdings at the level of the beneficial owner. The MKK has an account in the ESTS system to reflect the consolidated holdings of these securities in the MKK system.

As discussed in the assessment of principle 1 for the ESTS, the Takassbank holds sub-accounts of participants for facilitating its SSS functions for the money markets and secondary market on Government securities. The sub-accounts are reflected also in the ESTS.

In February 2016:

- 20% of the securities recorded in the ESTS were government issued sukuks and 80% of the securities recorded were government bills.
- As for the transaction volumes: 37% of it is for DVP operations, 57% of it is for free transfers, 6% of it is for repositioning [moving securities between different collateral accounts].
- As for the transaction values: 51% of it is for DVP operations, 38% of it is for free transfers, 11% of it is for repositioning.

Safeguarding the rights of securities issuers and holders

Since the CBRT is the owner and operator of the ESTS, there is no risk for participants' securities to be sequestrated due to the other activities of the CBRT.

The CBRT is subject to external and internal audit. During external audits of the CBRT and internal audit of the CBRT departments, transactions and holdings in some ESTS accounts are requested and controlled.

Similarly, when participants of ESTS are being externally audited, their account holdings and transactions in ESTS are requested from the CBRT by the auditors.

As a part of the audit of the Undersecretariat of Treasury, the Turkish Court of Accounts requests holdings in some ESTS securities accounts of certain dates (usually, issue or redemption dates). Moreover, issue and redemption processes are also overseen. Article 4 of the Law on Turkish Court of

Accounts (Law No. 6085), entitled “Independence, Audit Area, Duties and Competences of Turkish Court of Accounts” states that the Turkish Court of Accounts shall audit joint stock companies established by special law, in this case the CBRT.

As noted in the discussion on principle 1 for the ESTS, there is an ambiguity in the legal certainty of the protection of securities of banks and other institutional investors held with Takasbank.

Prevention of the unauthorised creation or deletion of securities

Securities in ESTS are kept in the name of the participants in separate accounts. Participants can inquire their account details online.

Every system participant is authorised only for the account types that it may have. In addition, for each operation type the account types that can be used are also defined. During initiation of ESTS transactions, suitability of accounts type for operation and parties are controlled by the system. If the operation type or related participants are not allowed to use the securities account mentioned in the message, the related transaction is automatically rejected by the system.

In ESTS, some account types, including *Issue Operations* account type, can only be used by the CBRT. All the securities are issued by increasing the holdings in *Issue Operations* account, only with the approval of three authorised personnel of the CBRT Markets Department. Then securities are transferred to the system participants from this account.

The securities within the system can only be deleted via diminishing the holdings in the *Issue Operations* account. This is also performed with approval of three authorised CBRT personnel.

Also, during the end of day operations, securities holdings in ESTS are compared with the overall securities pool accounts maintained at the CBRT Istanbul Branch. In this way, any inconsistency between the balances is automatically detected.

Periodic reconciliation of securities issues

The *End of day Statement*, which is sent during the end of day processing, notifies the participants, including the MKK, about their holdings and their daily transactions. In this context, daily changes of the *Issue Operations* account holdings are also reported to and hence controlled by the CBRT.

Moreover, during the end of the day processing, total of securities holdings in ESTS and holdings on the basis of securities, the values reported by *End of day Statement* and the data at the CBRT mainframe computer are verified by cross checks.

Since the CBRT carries out the issue, custody and redemption of government debt securities in the capacity of the financial agent of the Undersecretariat of Treasury, the CBRT informs the Undersecretariat of Treasury about the issue and redemption operations in advance, and carries operation with the approval of the Undersecretariat of Treasury. The Treasury does not have access to the ESTS and the CBRT systems. The CBRT carries on all operations related to the ESTS on behalf of the Treasury. Telephone, fax and official letters are used for the

	<p>communication purposes during the issue, custody and redemption operations. During the issue operations, a private online connection is also used between the Treasury and the CBRT.</p> <p>The MKK as a participant of the ESTS has access to its account in the ESTS system. During the coupon payment for securities, the details of the securities holdings of investors in the MKK is sought.</p>
Key consideration 2	A CSD should prohibit overdrafts and debit balances in securities accounts.
Description	Settlements of the transfer orders accepted to the system are not guaranteed and they are only settled when the balance of the participant's settlement account is sufficient. Negative balances and overdrafts from accounts are not allowed.
Key consideration 3	A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry. Where appropriate, a CSD should provide incentives to immobilise or dematerialise securities.
Description	<p>In ESTS, securities are dematerialised and processed in book-entry form. Although it was possible to rematerialise the securities previously, the decision of the Undersecretariat of Treasury, dated the November 2nd of 2012, ended the printing and rematerialisation of government debt securities. On the November 11th of 2012, the CBRT announced an instruction that the printing of the government securities has been terminated.</p> <p>With the redemption of latest printed securities, there have been no printed government debt securities since July 2013.</p>
Key consideration 4	A CSD should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.
Description	<p>Since safekeeping of the securities in ESTS is performed by the CBRT, there is no custody risk that may stem from insolvency.</p> <p>All the operations by the CBRT users in ESTS are carried out by dual control – maker and checker. These operations are logged and, if needed, can be tracked. In addition, in the context of daily reconciliation, during the end of day processing, participants are notified about their securities account holdings and their daily transactions.</p> <p>The MKK is charged with monitoring all capital market instruments and rights related with them in electronic environment and in the name of the beneficial owners. On the 30th of June 2012, the MKK became a participant of ESTS on special conditions and started to centrally monitor the government debt securities owned by retail and institutional investors, including banks for their secondary market trades in the BIST and inter-bank money markets. Participants of ESTS are responsible for transferring their customers' securities to the <i>MKK Customer Securities Account</i> held in ESTS.</p> <p>The banks participating in ESTS are under the supervision of the BRSA and subject to internal and external audit. Moreover, the CBRT is authorised to audit the CBRT payment and securities settlement system participants for their activities related with the system.</p>

	<p>Securities holdings of individual and institutional investor are held in their own names in the MKK system.</p> <p>Since securities in ESTS are kept only in dematerialised form, there is no risk associated with theft of physical securities.</p> <p>.....</p>
Key consideration 5	A CSD should employ a robust system that ensures segregation between the CSD's own assets and the securities of its participants and segregation among the securities of participants. Where supported by the legal framework, the CSD should also support operationally the segregation of securities belonging to a participant's customers on the participant's books and facilitate the transfer of customer holdings.
Description	<p>The securities of the ESTS participants are held in the specific individual accounts of the participants in their own names.</p> <p>The securities of customers of ESTS participants are segregated from the participants' own holdings and kept in a special securities account in ESTS, namely <i>MKK Customer Securities Account</i>, owned by the MKK.</p> <p>In the MKK system, the holdings in the <i>MKK Customer Securities Account</i> are kept segregated in the name of beneficial owner based on declarations by ESTS participants. Customers are able to track their holdings on the MKK system.</p> <p>As noted in the KC 1 of this principle and earlier in the assessment of principle 1 of the ESTS, the Takasbank maintains sub-accounts of participants in the money markets and secondary market for Government securities. These sub-accounts are reflected in the ESTS. The CMB as part of its ongoing oversight and supervision of Takasbank validates the effective segregation of customer assets.</p>
Key consideration 6	A CSD should identify, measure, monitor, and manage its risks from other activities that it may perform; additional tools may be necessary in order to address these risks.
Description	<p>The CBRT, as a central bank, is not exposed to the risks like liquidity risk or general business risk, due to its other activities. Therefore the identification, measurement and monitoring of risks due to other activities is not valid for the CBRT.</p> <p>Risks that the CBRT may incur due to its activities other than operating the payment systems are managed by the relevant CBRT departments.</p>
Key conclusions	<p>The CBRT, in the capacity as the agent of the Prime Ministry Undersecretariat of Treasury, carries out the dematerialised issue, custody and redemption of government securities, which are issued by the Prime Ministry Undersecretariat of Treasury, by the CBRT, and by other public institutions.</p> <p>The ESTS functions as a CSD-cum-SSS for these securities.</p> <p>ESTS carries out the book entry transfer and settlement of government debt securities and securities issued by the CBRT.</p> <p>Since the CBRT is the CSD for the securities in ESTS, there is neither custody risk stemming from the insolvency of the CSD nor the risk of the</p>

	<p>participants' securities being sequestered due to the other activities of the system operator.</p> <p>In ESTS, the securities owned by the participants' customers are segregated from the participants' own holdings and kept in a special securities account of the MKK. MKK keeps these securities by customer details in its system enabling customers to track their holdings. However, as noted in the discussion on principle 1, Takasbank holds securities accounts of the participants in the inter-bank money market in its books.</p> <p>The specific rules and provisions related to this are not explicitly covered in the POSR or other legal measures covering the ESTS.</p> <p>All the operations by the CBRT in ESTS require dual approval, are logged and, if needed, can be tracked. During the end of day operations of ESTS, participants are notified about their securities account holdings and their daily operations for reconciliation purposes.</p> <p>All the securities held in the ESTS are in dematerialized book entry form, there are no physical securities.</p> <p>The Takasbank maintains sub-accounts for participants in the money markets and secondary market for Government securities. These sub-accounts are reflected separately in the ESTS and also in the books of Takasbank.</p>
Assessment of Principle 11	Observed
Recommendations and comments	<p>The CBRT potentially in co-ordination with the BRSA and the CMB could institute measures to ensure the adequacy and effectiveness of the segregation of assets of the participants of the Takasbank SSS and other Takasbank operated markets. In addition, the CBRT could also institute measures to ensure that it is able to transfer customers/participants securities holdings with Takasbank to the MKK in the event of a default of Takasbank.</p>

PS	CSD	SSS	CCP	TR
●		●	●	

Principle 12: Exchange-of-value settlement systems	
If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.	
Key consideration 1	An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.
Description	The ESTS settles the funds leg in the EFT system in a DVP mode using DVP model 1.
Key conclusions	The ESTS settles the funds leg in the EFT system in a DVP mode using DVP model 1.

<i>Assessment of Principle 12</i>	Observed.
<i>Recommendations and comments</i>	

PS ●	CSD ●	SSS ●	CCP ●	TR
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Principle 13: Participant-default rules and procedures	
An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.	
Key consideration 1	An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.
Description	<p><i>Participant default rules and procedures</i></p> <p>The ESTS functions as a CSD-cum-SSS and settles in the EFT system for the funds leg in DVP mode, using DVP model 1. The default arrangements of the ESTS system as the same as that described for the EFT in the earlier assessment table.</p> <p><i>Use of financial resources</i></p> <p>The default arrangements of the ESTS system as the same as that described for the EFT in the earlier assessment table.</p>
Key consideration 2	An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.
Description	The default arrangements of the ESTS system as the same as that described for the EFT in the earlier assessment table.
Key consideration 3	An FMI should publicly disclose key aspects of its default rules and procedures.
Description	The default arrangements of the ESTS system as the same as that described for the EFT in the earlier assessment table.
Key consideration 4	An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.

Description	The default arrangements of the ESTS system as the same as that described for the EFT in the earlier assessment table.
Key conclusions	<p>The PSD has developed a default management procedure in December, 2015 covering all the payment and securities settlement systems operated by the CBRT.</p> <p>The default procedure is consistent with the provisions in the PSOR and derives its legal basis from the PSL.</p> <p>This procedure however is not tested in its entirety.</p> <p>The participants in the system are all banks, except the MKK. Banks are supervised by the BRSA and the MKK by the CMB. These authorities have the sole right related to insolvency or bankruptcy of these participants.</p> <p>There are existing co-ordination and information sharing arrangements between the CBRT, BRSA and the CMB.</p> <p>Hence there is high degree of certainty that the CBRT will have adequate notice to execute its default management process.</p> <p>Nevertheless, any delays in executing the default management process could escalate the risks in the system.</p>
Assessment of Principle 13	Broadly Observed
Recommendations and comments	The CBRT should conduct periodic testing of the default management procedure as a whole and include the participants also in this exercise. This could be integrated with the BCP or conducted as a standalone exercise at least once a year.

PS	CSD	SSS	CCP	TR
			●	

Principle 14. Segregation and Portability	
A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.	
Key consideration 1	A CCP should, at a minimum, have segregation and portability arrangements that effectively protect a participant's customers' positions and related collateral from the default or insolvency of that participant. If the CCP additionally offers protection of such customer positions and collateral against the concurrent default of the participant and a fellow customer, the CCP should take steps to ensure that such protection is effective.
Description	<p><i>Customer protection from participant default</i></p> <p>The ESTS is CSD-cum-SSS and hence this principle and KC are not applicable.</p>

	<p><i>Customer protection from participant and fellow customer default</i></p> <p>The ESTS is CSD-cum-SSS and hence this principle and KC are not applicable.</p> <p><i>Legal basis</i></p> <p>The ESTS is CSD-cum-SSS and hence this principle and KC are not applicable.</p>
Key consideration 2	A CCP should employ an account structure that enables it readily to identify positions of a participant’s customers and to segregate related collateral. A CCP should maintain customer positions and collateral in individual customer accounts or in omnibus customer accounts.
Description	The ESTS is CSD-cum-SSS and hence this principle and KC are not applicable.
Key consideration 3	A CCP should structure its portability arrangements in a way that makes it highly likely that the positions and collateral of a defaulting participant’s customers will be transferred to one or more other participants.
Description	The ESTS is CSD-cum-SSS and hence this principle and KC are not applicable.
Key consideration 4	A CCP should disclose its rules, policies, and procedures relating to the segregation and portability of a participant’s customers’ positions and related collateral. In particular, the CCP should disclose whether customer collateral is protected on an individual or omnibus basis. In addition, a CCP should disclose any constraints, such as legal or operational constraints, that may impair its ability to segregate or port a participant’s customers’ positions and related collateral.
Description	The ESTS is CSD-cum-SSS and hence this principle and KC are not applicable.
Key conclusions	The ESTS is CSD-cum-SSS and hence this principle is not applicable.
Assessment of Principle 14	Not Applicable
Recommendations and comments	

PS	CSD	SSS	CCP	TR
●	●	●	●	

Principle 15: General business risk

An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialize. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

Key consideration 1 **An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.**

Description The ESTS system and the EFT system are part of the integrated CBRT payment and securities settlement system, owned and operated by the CBRT. The details for the general business risk are the same as for the EFT system as recorded in the previous assessment table.

Key consideration 2 **An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.**

Description The details for the general business risk are the same as for the EFT system as recorded in the previous assessment table.

Key consideration 3 **An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.**

Description *Recovery or orderly wind-down plan*

The details for the general business risk are the same as for the EFT system as recorded in the previous assessment table.

Resources

	The details for the general business risk are the same as for the EFT system as recorded in the previous assessment table.
Key consideration 4	Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.
Description	The details for the general business risk are the same as for the EFT system as recorded in the previous assessment table.
Key consideration 5	An FMI should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.
Description	The details for the general business risk are the same as for the EFT system as recorded in the previous assessment table.
Key conclusions	The details for the general business risk are the same as for the EFT system as recorded in the previous assessment table.
Assessment of Principle 15	Observed.
Recommendations and comments	

PS ●	CSD ●	SSS ●	CCP ●	TR
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Principle 16. Custody and Investment Risks	
An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.	
Key consideration 1	An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.
Description	The ESTS system and the EFT system are part of the integrated CBRT payment and securities settlement system, owned and operated by the CBRT. The ESTS as part of its operation does not collect any collateral.
Key consideration 2	An FMI should have prompt access to its assets and the assets provided by participants, when required.
Description	The ESTS as part of its operation does not collect any collateral.
Key consideration 3	An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.
Description	The ESTS as part of its operation does not collect any collateral.
Key consideration 4	An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.
Description	<i>Investment strategy & Risk characteristics of investments</i> The ESTS as part of its operation does not collect any collateral.
Key conclusions	The ESTS as part of its operation does not collect any collateral.
Assessment of Principle 16	Observed.
Recommendations and comments	

PS	CSD	SSS	CCP	TR
●	●	●	●	●

Principle 17: Operational risk

An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfillment of the FMI’s obligations, including in the event of a wide-scale or major disruption.

Key consideration 1 **An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.**

Description

The ESTS system and the EFT system are part of the integrated CBRT payment and securities settlement system, owned and operated by the CBRT. The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.

Identification of operational risk

The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.

Management of operational risk

The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.

Policies, processes and controls

The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.

Key consideration 2 **An FMI’s board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI’s operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.**

Description

Roles, responsibilities and framework

The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.

Review, audit and testing

The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.

Key consideration 3	An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.
Description	The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.
Key consideration 4	An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.
Description	The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.
Key consideration 5	An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.
Description	<p><i>Physical security</i></p> <p>The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.</p> <p><i>Information security</i></p> <p>The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.</p>
Key consideration 6	An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.
Description	<p><i>Objectives of business continuity plan</i></p> <p>The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.</p> <p><i>Design of business continuity plan</i></p> <p>The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.</p> <p><i>Secondary site</i></p> <p>The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.</p>

	<p><i>Review and testing</i></p> <p>The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.</p>
Key consideration 7	An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.
Description	<p><i>Risks to the FMI's own operations</i></p> <p>The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.</p> <p><i>Risks posed to other FMIs</i></p> <p>The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.</p>
Key conclusions	<p>The details for the operational risk management are the same as for the EFT system as recorded in the previous assessment table.</p> <p>The CBRT includes the risks it poses to other FMIs as part of the framework for assessing risks from and to participants.</p>
Assessment of Principle 17	Broadly Observed
Recommendations and comments	<p>The CBRT could build on the specific provisions in the PSOR to include explicit mandates with respect to operational risk management for its participants and have a mechanism to assess compliance to those on an ongoing basis.</p> <p>The CBRT could consider including more stringent operational risk management measures for the participants with a large share of transactions, based on the monthly network analysis being carried out.</p> <p>The CBRT could also consider incorporating a more structured assessment of the operational risks it can pose to other FMIs and the risks it could be exposed from them. This assessment could become the basis for the more detailed and complex scenarios being proposed for inclusion in the revised business continuity plans.</p>

PS ●	CSD ●	SSS ●	CCP ●	TR
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Principle 18. Access and participation requirements	
An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	
Key consideration 1	An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.
Description	<p>The ESTS system and the EFT system are part of the integrated CBRT payment and securities settlement system, owned and operated by the CBRT. The details for the access and participation requirements are the same as for the EFT system as recorded in the previous assessment table.</p> <p><i>Participation criteria and requirements</i></p> <p>The details for the access and participation requirements are the same as for the EFT system as recorded in the previous assessment table. In addition to banks, the only other participant in the ESTS is the MKK.</p> <p><i>Access to trade repositories</i></p> <p>This item is not applicable to the ESTS.</p>
Key consideration 2	An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.
Description	<p><i>Justification and rationale of participation criteria</i></p> <p>The details for the access and participation requirements are the same as for the EFT system as recorded in the previous assessment table.</p> <p><i>Least restrictive access</i></p> <p>The details for the access and participation requirements are the same as for the EFT system as recorded in the previous assessment table.</p> <p><i>Disclosure of criteria</i></p> <p>The details for the access and participation requirements are the same as for the EFT system as recorded in the previous assessment table.</p>
Key consideration 3	An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and

	orderly exit of a participant that breaches, or no longer meets, the participation requirements.
Description	<p><i>Monitoring compliance</i></p> <p>The details for the access and participation requirements are the same as for the EFT system as recorded in the previous assessment table.</p> <p><i>Suspension and orderly exit</i></p> <p>The details for the access and participation requirements are the same as for the EFT system as recorded in the previous assessment table.</p>
Key Conclusions	The details for the access and participation requirements are the same as for the EFT system as recorded in the previous assessment table.
Assessment of principle 18	Observed
Recommendations and comments	

PS	CSD	SSS	CCP	TR
●	●	●	●	●

Principle 19. Tiered Participation Arrangements	
An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.	
Key consideration 1	An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.
Description	<p>The ESTS system and the EFT system are part of the integrated CBRT payment and securities settlement system, owned and operated by the CBRT. The details for the tiered participation arrangements are the same as for the EFT system as recorded in the previous assessment table.</p> <p><i>Tiered participation arrangements, Risks to the FMI</i></p> <p>The details for the tiered participation arrangements are the same as for the EFT system as recorded in the previous assessment table.</p>
Key consideration 2	An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.
Description	The details for the tiered participation arrangements are the same as for the EFT system as recorded in the previous assessment table.
Key consideration 3	An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they

	access the FMI in order to manage the risks arising from these transactions.
Description	The details for the tiered participation arrangements are the same as for the EFT system as recorded in the previous assessment table.
Key consideration 4	An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.
Description	The details for the tiered participation arrangements are the same as for the EFT system as recorded in the previous assessment table.
Key conclusions	<p>The PSOR acknowledges and regulates only the direct participants in the CBRT payment and securities settlement systems and there is no definition or rules set for indirect participation. Entities that are not eligible for participation can perform operations the participants, but are treated as customers of participants, rather than indirect participants.</p> <p>However in the case of ESTS, retail investors and institutional investors who wish to hold government securities and CBRT bills, can do so in the MKK and also for banks which are not a member of the ESTS in the CBRT branches. Hence by design there are no tiered participants in the ESTS system and this is hence not an issue of concern.</p>
Assessment of Principle 19	Observed
Recommendations and comments	

PS	CSD	SSS	CCP	TR
	●	●	●	

Principle 20. FMI Links											
An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.											
Key consideration 1	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td>●</td> <td>●</td> <td>●</td> <td></td> </tr> </table> <p>Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.</p>	PS	CSD	SSS	CCP	TR		●	●	●	
PS	CSD	SSS	CCP	TR							
	●	●	●								
Description	ESTS has a link with the MKK, the ESTS functions as the issuer CSD and the MKK the investor CSD. The ESTS is part of the CBRT payment and securities settlement system and in the risk management framework, the MKK is treated as another participant and not as a link.										

	<p>However the MKK is overseen by the CBRT for its SSS functions and hence also has a full integrated view of the risks arising from the ESTS-MKK link.</p> <p>For the purpose of finality, the MKK has an account in the ESTS to represent the consolidated holding of retail and institutional investors in the MKK. The transfers from and to MKK are first reflected as a transfer from a participants account in the ESTS to the MKK and a message is triggered to the MKK to reflect the necessary changes in its books.</p> <p>The MKK has access to its ESTS account all through the operational hours and also receives at the end of the business day, the account balance and list of transactions.</p> <p>As noted earlier in the assessment of the principle 1 of the ESTS, the ESTS also has a link with Takasbank.</p>										
Key consideration 2	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td>●</td> <td>●</td> <td>●</td> <td>●</td> </tr> </table> <p>A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.</p>	PS	CSD	SSS	CCP	TR		●	●	●	●
PS	CSD	SSS	CCP	TR							
	●	●	●	●							
Description	The ESTS, Takasbank and the MKK are both subject to Turkish laws and overseen by the CBRT.										
Key consideration 3	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td>●</td> <td>●</td> <td></td> <td></td> </tr> </table> <p>Linked CSDs should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between CSDs should be covered fully with high quality collateral and be subject to limits.</p>	PS	CSD	SSS	CCP	TR		●	●		
PS	CSD	SSS	CCP	TR							
	●	●									
Description	There are no credit extensions between MKK and ESTS; and between ESTS and Takasbank. The funds leg of a transaction involving the MKK and the ESTS is settled in the EFT system. There are no funds settlement in the ESTS and Takasbank link.										
Key consideration 4	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td>●</td> <td>●</td> <td></td> <td></td> </tr> </table> <p>Provisional transfers of securities between linked CSDs should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.</p>	PS	CSD	SSS	CCP	TR		●	●		
PS	CSD	SSS	CCP	TR							
	●	●									
Description	No provisional transfers are allowed. All transfers are final.										

Key consideration 5	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td>●</td> <td>●</td> <td></td> <td></td> </tr> </table> <p>An investor CSD should only establish a link with an issuer CSD if the arrangement provides a high level of protection for the rights of the investor CSD’s participants.</p>	PS	CSD	SSS	CCP	TR		●	●		
PS	CSD	SSS	CCP	TR							
	●	●									
Description	The ESTS functions as the issuer CSD in this link.										
Key consideration 6	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td>●</td> <td>●</td> <td></td> <td></td> </tr> </table> <p>An investor CSD that uses an intermediary to operate a link with an issuer CSD should measure, monitor, and manage the additional risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary.</p>	PS	CSD	SSS	CCP	TR		●	●		
PS	CSD	SSS	CCP	TR							
	●	●									
Description	The ESTS functions as the issuer CSD in this link.										
Key consideration 7	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td></td> <td></td> <td>●</td> <td></td> </tr> </table> <p>Before entering into a link with another CCP, a CCP should identify and manage the potential spill-over effects from the default of the linked CCP. If a link has three or more CCPs, each CCP should identify, assess, and manage the risks of the collective link arrangement.</p>	PS	CSD	SSS	CCP	TR				●	
PS	CSD	SSS	CCP	TR							
			●								
Description	<p><i>Linked CCP default & Collective link arrangements (three or more CCPs)</i></p> <p>The ESTS system is a CSD-cum-SSS and this KC is not applicable.</p>										
Key consideration 8	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td></td> <td></td> <td>●</td> <td></td> </tr> </table> <p>Each CCP in a CCP link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked CCP and its participants, if any, fully with a high degree of confidence without reducing the CCP’s ability to fulfil its obligations to its own participants at any time.</p>	PS	CSD	SSS	CCP	TR				●	
PS	CSD	SSS	CCP	TR							
			●								
Description	<p><i>Exposures and coverage of exposures</i></p> <p>The ESTS system is a CSD-cum-SSS and this KC is not applicable.</p> <p><i>Management of risks</i></p>										

	<p>The ESTS system is a CSD-cum-SSS and this KC is not applicable.</p> <p><i>Information provided to participants</i></p> <p>The ESTS system is a CSD-cum-SSS and this KC is not applicable.</p>										
Key consideration 9	<table border="1"> <tr> <td>PS</td> <td>CSD</td> <td>SSS</td> <td>CCP</td> <td>TR</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>●</td> </tr> </table> <p>A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.</p>	PS	CSD	SSS	CCP	TR					●
PS	CSD	SSS	CCP	TR							
				●							
Description	<p>The ESTS system is a CSD-cum-SSS and this KC is not applicable.</p>										
Key conclusions	<p>ESTS has a link with the MKK, the ESTS functions as the issuer CSD and the MKK the investor CSD. The ESTS is part of the CBRT payment and securities settlement system and in the risk management framework, the MKK is treated as another participant and not as a link.</p> <p>However the MKK is overseen by the CBRT for its SSS functions and hence also has a full integrated view of the risks arising from the ESTS-MKK link.</p> <p>For the purpose of finality, the MKK has an account in the ESTS to represent the consolidated holding of retail and institutional investors in the MKK. The transfers from and to MKK are first reflected as a transfer from a participants account in the ESTS to the MKK and a message is triggered to the MKK to reflect the necessary changes in its books.</p> <p>The MKK has access to its ESTS account all through the operational hours and also receives at the end of the business day, the account balance and list of transactions.</p> <p>While the ESTS does not treat the arrangement with the MKK as a link in its risk management framework, it is nevertheless not an issue of concern, as both are overseen by the CBRT, which hence has an integrated view of the risks arising from the link.</p>										
Assessment of Principle 20	Observed.										
Recommendations and comments	<p>The CBRT should consider updating its risk management for the CBRT payment and securities settlement systems and reflect the arrangement between the ESTS and MKK; and ESTS and Takasbank as a link and address the risks accordingly.</p>										

PS ●	CSD ●	SSS ●	CCP ●	TR ●
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Principle 21: Efficiency and effectiveness	
An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.	
Key consideration 1	An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.
Description	The ESTS system and the EFT system are part of the integrated CBRT payment and securities settlement system, owned and operated by the CBRT. The details for the efficiency and effectiveness are the same as for the EFT system as recorded in the previous assessment table.
Key consideration 2	An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.
Description	The details for the efficiency and effectiveness are the same as for the EFT system as recorded in the previous assessment table.
Key consideration 3	An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.
Description	The details for the efficiency and effectiveness are the same as for the EFT system as recorded in the previous assessment table.
Key conclusions	The details for the efficiency and effectiveness for the EFT system are also applicable for the ESTS system. In addition, there are no opportunities to simplify the process of Government securities transactions. The process varies based on the counterpart.
Assessment of Principle 21	Observed
Recommendations and comments	<p>The CBRT in co-ordination with other relevant stakeholders could study the current process for Government securities transactions and explore opportunities to simplify and make the process more efficient.</p> <p>Creating a simplified process for Government securities transactions will likely require:</p> <ul style="list-style-type: none"> - Move OTC market to the BIST or Takasbank and interface with MKK - System interface between MKK-Takasbank, and ESTS; and - Introduce ability to mark pledges in the ESTS system;

PS ●	CSD ●	SSS ●	CCP ●	TR ●
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Principle 22: Communication procedures and standards	
An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.	
Key consideration 1	An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.
Description	<p><i>Communication procedures</i></p> <p>The details for the communication procedures are the same as for the EFT system as recorded in the previous assessment table.</p> <p><i>Communication standards</i></p> <p>The details for the communication procedures are the same as for the EFT system as recorded in the previous assessment table.</p>
Key conclusions	The details for the communication procedures are the same as for the EFT system as recorded in the previous assessment table.
Assessment of Principle 22	Observed
Recommendations and comments	-

PS ●	CSD ●	SSS ●	CCP ●	TR ●
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Principle 23: Disclosure of rules, key procedures, and market data	
An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.	
Key consideration 1	An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.
Description	<p><i>Rules and procedures, Disclosure</i></p> <p>The details for the disclosure, rules and market data are the same as for the EFT system as recorded in the previous assessment table.</p>

Key consideration 2	An FMI should disclose clear descriptions of the system’s design and operations, as well as the FMI’s and participants’ rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.
Description	The details for the disclosure, rules and market data are the same as for the EFT system as recorded in the previous assessment table.
Key consideration 3	An FMI should provide all necessary and appropriate documentation and training to facilitate participants’ understanding of the FMI’s rules and procedures and the risks they face from participating in the FMI.
Description	The details for the disclosure, rules and market data are the same as for the EFT system as recorded in the previous assessment table.
Key consideration 4	An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.
Description	The details for the disclosure, rules and market data are the same as for the EFT system as recorded in the previous assessment table.
Key consideration 5	An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO disclosure framework for financial market infrastructures. An FMI also should, at a minimum, disclose basic data on transaction volumes and values.
Description	The details for the disclosure, rules and market data are the same as for the EFT system as recorded in the previous assessment table.
Key conclusions	The details for the disclosure, rules and market data are the same as for the EFT system as recorded in the previous assessment table.
Assessment of Principle 23	Observed
Recommendations and comments	-

PS	CSD	SSS	CCP	TR
				●

Principle 24: Disclosure of Market Data by Trade Repositories	
A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.	
Key consideration 1	A TR should provide data in line with regulatory and industry expectations to relevant authorities and the public, respectively, that is comprehensive and at a level of detail sufficient to enhance market transparency and support other public policy objectives.
Description	The ESTS is a payment CSD-cum-SSS and this principle is not applicable.
Key consideration 2	A TR should have effective processes and procedures to provide data to relevant authorities in a timely and appropriate manner to enable them to meet their respective regulatory mandates and legal responsibilities.
Description	The ESTS is a payment CSD-cum-SSS and this principle is not applicable.
Key consideration 3	A TR should have robust information systems that provide accurate current and historical data. Data should be provided in a timely manner and in a format that permits it to be easily analyzed.
Description	The ESTS is a payment CSD-cum-SSS and this principle is not applicable.
Key conclusions	The ESTS is a payment CSD-cum-SSS and this principle is not applicable.
Assessment of Principle 24	Not applicable
Recommendations and comments	

VII. DETAILED ASSESSMENT REPORT – RESPONSIBILITIES

Responsibility A²⁸: Regulation, supervision, and oversight of FMIs	
FMIs should be subject to appropriate and effective regulation, supervision, and oversight by a central bank, market regulator, or other relevant authority	
Key consideration 1	What criteria do authorities use to identify FMIs that should be regulated, supervised and overseen?
Description	<p>The authorities with responsibilities for oversight of the FMIs are the CBRT (by virtue of the CBRT Law and PSL) and the CMB (by virtue of the CML). These two authorities have different but co-ordinated approach of classifying FMIs. The approach followed by these authorities are presented below.</p> <p><u>CBRT</u></p> <p>Payment and securities settlement systems are both defined as “the structure that has common rules and provides the infrastructure required for the clearing and settlement transactions carried out in order to realize payment and securities transfers arising from transfer orders among three or more participants” in the PSL, articles 3 (j) and 3 (ö). The CBRT is the authorized institution which regulates, licenses and oversees all payment and securities settlement systems in Turkey. In terms of regulation and oversight, there is no differentiation among these systems. Thus all of the systems in Turkey, which are compatible with the definition in the Payment Systems Law, are regulated, licensed and overseen by the CBRT. The Article (11) of the PSL, authorizes the CBRT to designated specific payment and securities settlement systems for which the provisions related to finality and protection of collateral rights, described in PSL article (10), would apply. The CBRT has accordingly designated²⁹ the EFT, RPS, ESTS, MKK and Takasbank. MKK, Takasbank, Interbank Clearing House (ICH) and the Interbank Card Center (ICC). The MKK and Takasbank are licensed by the CBRT as SSS.</p> <p>The Regulation on Oversight of the Payment and Securities Settlement Systems (ROSPSS) was issued by the CBRT to implement its oversight powers vested with by the CBRT law and the PSL. In the article 5(3) of the ROSPSS, the CBRT powers to classify payment and securities settlement systems and apply different standards to them is articulated. The CBRT currently is in the process of publishing its oversight framework.</p> <p>The framework proposes to categorize the systems as SSS and payment system. The payment systems are further sub-categorized as systemically important, systems of system wide importance and prominently important</p>

²⁸ The CBRT is assessed with a rating of “Observed” for Responsibility A during CPMI-IOSCO Level 2-3 Implementation Monitoring Activities for Responsibilities of relevant authorities for financial market infrastructures.

²⁹

<http://www.tcmb.gov.tr/wps/wcm/connect/TCMB+EN/TCMB+EN/Main+Menu/PAYMENT+SYSTEMS/Payment+Systems+in+Turkey/>

	<p>systems. The framework further proposes, classifying the systemically important payment systems and the SSS as FMIs and the CPMI-IOSCO PFMI as the applicable standards for them.</p> <p><u>CMB</u></p> <p>The systems subject to the oversight of the CMB are listed in the CML. The CMB considers all the systems subject to its oversight, as FMIs. In this regard, Article 35 (g), (ğ), (h) of the CML, specifies that all central clearing institutions, central depository institutions and, trade repositories are the institutions for which the establishment and principles of activities are determined by the Board. Also Article 78 of CML regulates CCPs – defined as central clearing institutions undertake the duty to complete clearing by acting as seller against buyer and buyer against seller. Article 78 also decrees that exchanges or other organized market places may also apply to the CMB in order to initiate the practice of the central counterparty for the traded capital market instruments. The article 81 of the CML, specifically authorizes the MKK to function as the CSD for the Turkish capital markets. The article 87 of the CML, describes the role of the trade repositories.</p> <p>The CMB has further issued the “Bylaw on the General Regulation on the establishment and operating principles of central clearing and settlement institutions”. This serves as the regulation articulating the powers of the CMB over CCPs and how these should function.</p> <p>The CMB has also issued the “Regulation on the Establishment, Operation, Conduct and Audit Principles of the Central Securities Depository”. This regulation spells out the operating principles and responsibilities of the MKK and the CMB’s powers of oversight over its CSD activities.</p>
Key consideration 2	How the criteria are publicly disclosed?
Description	<p>The Payment Systems Law and the Capital Market Law are publicly disclosed by being published in the Official Gazette and respectively on the CBRT’s and the CMB’s web site.</p> <p>The list of payment and securities settlement systems licensed by the CBRT are listed on their website. There is however no specific articulation of the classification of the systems and the criteria to classify a system as an FMI.</p>
Key conclusions for Responsibility A	<p>The CBRT law, the PSL and the CML clearly layout the specific payment and market infrastructures that are subject to regulation, supervision and oversight of the authorities. These laws put together, assign the responsibility for regulating, supervising and overseeing payment systems and SSS with the CBRT; and CCPs, CSDs and TRs with the CML.</p> <p>The authorities have further publically announced their adoption of the CPMI-IOSCO PFMI. The CMB has specifically stated that the PFMI would be applicable for the MKK and Takasbank. The CBRT in its public statement on its objectives for payment and securities settlement systems has articulated that it will apply the PFMI to all the payment and securities settlement systems under its oversight.</p>

	<p>The CBRT has further issued the ROPSS, which articulates its powers to regulate and oversee the payment and securities settlement systems. The CMB has issued specific regulations/communiqués for the CSDs and CCPs, however it has not yet issued regulations for TRs. The powers of the CMB with respect over TRs is however clear and derives from the CML. Also, which the CMB has licensed the MKK as a TR, it has not yet commenced operations and the CMB as part of its approval to MKK to commence operations as a TR intended to issue a regulation/communiqué to fully articulate its regulatory and oversight actions and powers related to TRs.</p>
Assessment of Responsibility A	Broadly Observed.
Recommendations and comments	<p>The CBRT as part of the finalization of the oversight framework could consider defining explicit criteria for systemically important payment systems and elaborate which specific systems it considers FMIs to which the PFMI would be applied.</p> <p>The CMB should ensure that it issues a regulation/communiqué on TRs, before it accords approval to the MKK to commence its operations as a TR.</p>

Responsibility B: Regulatory, supervisory, and oversight powers and resources

Central banks, market regulators, and other relevant authorities should have the powers and resources to carry out effectively their responsibilities in regulating, supervising, and overseeing FMIs.

Key consideration 1 **Authorities should have powers or other authority consistent with their relevant responsibilities, including the ability to obtain timely information and to induce change or enforce corrective action.**

Description	<p>CBRT <i>Powers or other authority consistent with relevant responsibilities</i></p> <p>The CBRT is responsible for the uninterrupted functioning of the payment systems and the SSSs. In this context, the CBRT is fully authorized for regulation, oversight and licensing of payment and securities settlement systems in Turkey.</p> <p><i>Powers to obtain timely information</i></p> <p>According to Article 8 (2) of the PSL and Article 6(1) of the ROSPSS, within the context of oversight, payment and securities settlement systems are obliged to submit all kinds of information to the CBRT. There are no relevant constraints.</p> <p>Oversight of the system</p> <p><i>PSL, Article 8(2): “Within the context of oversight, system operator is obliged to submit all kinds of records, information and documents, even they are confidential, to the Central Bank of the Republic of Turkey with respect to the procedures and principles to be determined by the Central Bank of the Republic of Turkey, and make the system ready for the oversight of the Central Bank of the Republic of Turkey.”</i></p> <p>Keeping records and documents, protection of personal information, notification of changes</p> <p><i>PSL, Article 23(3): “In the case that any change occurs that shall affect the validity of the information and documents requested by the competent authority, the system</i></p>
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operator will promptly inform the Bank; the payment institution and electronic money institution will inform the Agency on this issue.”

Records, information and documents requested during oversight activities

ROSPSSS, Article 6(1): “*The Central Bank of the Republic of Turkey is authorized to request all sorts of records, information and documents from relevant persons, institutions and organizations during its oversight activities.*”

Under Article 18 of the Regulation on Operations of Payment and Securities Settlement Systems (ROPSS) the system operator is also obliged to notify the CBRT about system participants and the situations which disrupt the regular operation of the system.

Obligation to notify the Central Bank of the Republic of Turkey

ROPSSS, Article 18 (1): “*The system operator shall notify the Central Bank of the Republic of Turkey of the system participants. In case of any change of these notifications, it shall notify the Central Bank of the Republic of Turkey without delay of any subsequent change concerning those participants, too.*

(2) In case the system operator obtains any information about the system participants that may disrupt the smooth operation of the system, it shall notify the Central Bank of the Republic of Turkey without delay.

(3) The system operator shall promptly notify the Central Bank of the Republic of Turkey about the situations which disrupt the regular operation of the system, and cause interruptions or prevent the closure of the system.

(4) The Central Bank of the Republic of Turkey is authorized to request all kinds of information, documents and records related to the system participants from the system operator to whom the system participants are required to provide them. The system operator is obliged to provide all information, documents and records requested by the Central Bank of the Republic of Turkey pursuant to this paragraph.

(5) The system operator shall promptly notify the Central Bank of the Republic of Turkey about any change which may affect the accuracy and validity of information, documents and records required by the Central Bank of the Republic of Turkey.”

According to Article 20 of ROPSS, the system operator is also obliged to share information through its website such as financial statements and reports, pricing principles, organizational structure, operating principles of the system, list of participants. Besides these information the CBRT can require the system to publish any information on its website.

Website, transparency and information to be published

ROPSS, Article 20(1): “*The system operator is required to have a website that enables to share information with public about the system that is compulsory in accordance with transparency principle and information society.*

(2) The system operator shall publish its financial statements and reports, pricing principles, statistical data regarding the transactions executed in the system, organizational structure, operating principles of the system, rule of the participation to the system without prejudice to the information security and list of participants on its website and keep all this information up to date.

(3) Besides the provisions laid down in paragraph 2 of this Article, the Central Bank of the Republic of Turkey may require the system operator to publish additional information and documents on its website.”

Powers to induce change or enforce corrective action

In Article 9 (1) of the PSL, the incidents where the CBRT takes the appropriate measures with respect to the operation of the system, are stated. In Article 9 (2), the measures which may be taken against the incidents are listed.

Incidents which require taking measures and measures to be taken

PSL, Article 9 (1): “*The Central Bank of the Republic of Turkey takes the appropriate measures with respect to the operation of the system in case of detection of the following incidents:*

- a) Acting beyond the scope of the operation license.*
- b) Acting contrary to this Law and the regulations issued pursuant to this Law.*
- c) Jeopardizing the security, soundness and stability of the system.*
- ç) Detecting any situation in which the system operator no longer meets the requirements specified in Article 5 of this Law.*
- d) The system operator ceasing to cooperate in the oversight of the system.*
- e) Not beginning operations within one year after acquiring an operation license.*
- f) The system operator notifying the Central Bank of the Republic of Turkey that the system operator clearly renounces its operation license or terminates system activities.*
- g) Detecting any situation in which the operating license is obtained by misstatements and non-factual documents.*
- ğ) Violating the third paragraph of Article 23 of this Law,*
- h) The Central Bank of the Republic of Turkey deducing that the stability of the financial system could be endangered if the system operator continues to operate the system.*

(2) If the Central Bank of the Republic of Turkey detects the incidents in the first paragraph, it will take the measures listed below according to the severity of the violation:

- a) Granting a reasonable period of time for the system operator to remove the violation.*
- b) Requesting from the system operator to take necessary measures approved by the Central Bank of the Republic of Turkey in order to ensure the realization of settlement.*
- c) Requesting from the system operator to dismiss the participants from the system who do not fulfill their obligations pursuant to this Law.*
- ç) Withdrawing the operation license of the system operator or temporarily suspending the operation license granted to the system operator until the detected violation is removed.*
- d) Temporarily taking over the management of the system operator with the purpose of avoiding systemic risks that could threaten the financial stability. “*

Violation of regulations and decisions

PSL, Article 27 (1): “*For the legal persons who violate the provisions within this Law, and the regulations and decisions issued pursuant to this Law and which are*

not subject to a separate criminal sanction in this Section, an administrative fine from twenty thousand Turkish Liras to five hundred thousand Turkish Liras shall be imposed by the Board if they function as a payment service provider or by the Central Bank of the Republic of Turkey if they function as a system operator. However, if a benefit is gained as a result of this violation, the administrative fine cannot be less than double this benefit. If this violation is committed more than once until the administrative sanction is imposed, only one administrative fine shall be imposed and the fine shall be increased by two times. However in case a benefit is gained or loss is caused by committing this violation, the administrative fine cannot be less than three times this benefit or harm.”

CMB

The CML provides a very general power to the CMB in terms of oversight and regulation of capital market institutions including CCPs, CSDs and TRs.

Powers to obtain timely information

According to Article 77 of CML: “*CMB has the regulatory, supervisory and overseeing powers on central clearing institutions within the scope of this article. The Board may request from central clearing institutions and members of these institutions to carry out the issues it deems necessary about central clearing operations and to send all kinds of information and documents regularly, or upon its demand. The power to request all kinds of information regularly or upon demand covers the power to request timely information as well. In that the CML gives the authority to request information in a time period specified by CMB regarding “information on demand” whereas regular reporting requirements are specifically tied to a time period in the related laws or bylaws.*”

According to Article 78/1 of CML being a central clearing institution is a prerequisite for providing central counterparty services. So abovementioned article directly applies to CCPs in the Turkish capital markets. Therefore there are no relevant constraints to obtain timely information from the CCPs.

According to Article 80/4 of CML, the CMB is the supervisory and surveillance authority of central securities depositories under this article – namely the MKK, which is explicitly mentioned in the article. The article further reads as: “*The Board may request from central securities depositories and their members to carry out the issues it deems necessary about central custody activities and to send all kinds of information and documents upon its request or regularly.*”

According to Article 81/6 of CML, the Board is the supervision and surveillance authority of the MKK and may request from the MKK and its members to carry out the issues it deems necessary about the monitoring of capital market instruments in a dematerialized form and to send all kinds of information and documents in written format or in the electronic environment upon its request or regularly.

At the moment there are no implementing regulation is not in force in Turkey yet, for TRs. On the other hand, regulation on the powers or other authority of CMB or any other relevant authority enabling them to obtain timely information from the TRs, including confidential and non-public information, in order to carry out its responsibilities is planned to take place in the implementing regulation.

Powers to induce change or enforce corrective action

	<p>According to Article 103/1 the CML: “persons who act in violation of the regulations, determined standards and forms based on this Law as well as general and specific decisions of the Board, shall be imposed an administrative fine from twenty thousand Turkish Liras up to two hundred fifty thousand Turkish Liras by the Board. However, in cases where a benefit has been gained due to the violation of the obligation, the amount of the administrative fine to be imposed cannot be less than twice of this benefit.”</p> <p>In addition, according to Article 111/1 of the CML: “the person who does not give at all or under the demanded format the information, documents and registers, including those kept in the electronic environment, requested by the Board or by those assigned according to this Law, shall be sentenced with prison from one year up to three years.”</p> <p>From the abovementioned articles, the CMB has the powers to impose an administrative fine to actions against the bylaws and discretionary power to impose an administrative fine or to apply to court for demanding sentence according to Article 111 for actions other than the ones specified in the bylaws regarding the submission of information requested by CMB.</p> <p>According to Article 9/3 of the “Bylaw on the Establishment and Operations of Central Clearing Institutions”; the provisions under Article 41 of CML shall also apply for the cancellation of the operation license granted by the Board to a central clearing institution. (Being a central clearing institution is a prerequisite to act as a CCP in Turkey according to 78/1 of CML, so this provision also applies to the CCPs).</p> <p>Article 41 of CML that is applicable to central clearing institutions acting against the regulations is given below:</p> <p>“Withdrawal of the license and activity permission ARTICLE 41 – (1) In cases listed below, the Board may withdraw the permission for activity and license it has granted in the scope this Law, without prejudice to other related provisions of this Law:</p> <ul style="list-style-type: none"> a) Expressly renouncing the authority to carry out activities, or not performing any activity under the related permission for two years starting from the date the permission was granted b) Having obtained permission for activity by making false or misleading statements or through other illegal means c) No longer being able to meet the conditions required for the permission for activity and not being able to meet them again within three months starting from the date when it has been established by the Board that they have been lost”.
Key consideration 2	Authorities should have sufficient resources to fulfill their regulatory, supervisory, and oversight responsibilities.
Description	<p><u>CBRT</u></p> <p><i>Resources</i></p> <p>In Turkey, the CBRT is the regulator and overseer of payments systems and SSS. The CBRT has adequate funding and experienced human resources to carry out regulation and oversight of payment systems and securities settlement systems in Turkey. The CBRT has autonomy regarding its budget and human resources policies. The CBRT personnel participate in many seminars and trainings all around the world about payment systems. In CBRT, the PSD is responsible for various activities related to</p>

payment and securities settlement systems in Turkey. There is a separate division authorized for the regulation and oversight of these systems in the PSD.

The oversight and regulation division is composed of 15 employees. One of them is the director, two of them are performing the deputy director role, 10 of them are specialists regarding payment and securities settlement systems in Turkey and two of them are support personnel. There are two specialists responsible for the oversight of each payment or securities settlement system.

Legal protections

The PSL has specific article on the investigation and prosecution procedure, protecting the powers of the CBRT personnel carrying out their oversight and regulatory activities.

PSL, Article 37 (3): " Investigating and prosecuting the Central Bank of the Republic of Turkey personnel due to their actions during performance of their duties stated in this Law and the regulations to be issued pursuant to this Law, shall be subject to written application of the Central Bank of the Republic of Turkey to Chief Public Prosecutor's Office."

CMB

Resources

In Turkey, the CMB is the regulatory and oversight authority for CCPs, CSDs and TRs. The CMB has adequate funding and experienced human resources from different disciplines (economics, finance, lawyers and engineers) to carry out regulation and oversight of these FMIs in Turkey. The CMB has autonomy with respect to its budget and human resources policies. The CMB personnel are encouraged to participate in many seminars and trainings globally and are assigned to participate in related committees within the international organizations. In CMB, the Department of Intermediary Activities is responsible for regulation and oversight of the CCPs, CSDs and TRs in Turkey.

This department is also responsible for investment firms operating in Turkey including 92 brokerage firms and 45 banks and their investment services. Regulation, supervision and oversight of Borsa İstanbul A.Ş.'s exchange activities, Takasbank's central clearing functions, MKK's CSD and proposed TR functions fall under the responsibility of this department as well. There are 48 employees comprising of one director, three deputy directors, 26 specialists, 12 assistant specialists and 6 support personnel.

There are no specific individuals assigned with the oversight activities with respect to the FMIs under CMB's scope. Assignments are made on a task basis depending on the overall work schedule.

From a legal perspective, the relevant provisions are:

- CML, Article 117 (1): " CMB possesses a public legal entity and an administrative and financial autonomy established for carrying out the tasks and exercising the authorities granted by the CML and the related legislations. "

- CML, Art 117 (3): "the Board makes use of the financial resources it disposes in the context of this Law and the related legislation freely, as much as its tasks and

	<p>authorities require and in the framework of the principles and procedures determined in its own budget.”</p> <ul style="list-style-type: none"> - CML, Art 117/4, the Board employs staff in an adequate number and quality for the purpose of carrying out the tasks and use the authorities given with CML and the related legislation. - CML, Art 117/5, all the money, documents and property of the Board qualify as state property and they cannot be attached and pledged. <p><i>Legal Protection</i></p> <p>The CM, article 88 empowers the board to assign staff to execute the powers vested with it. The article 89, further requires the supervised entities to provide any requested information by the authorized CMB staff and if needed authorizes the CMB to search with the support of police for any required information in the premises and systems of the supervised entities.</p>
<i>Key conclusions for Responsibility B</i>	<p>The CBRT and the CMB have the relevant powers to obtain information and induce change to carry out their oversight activities.</p> <p>These powers have been explicitly articulated in secondary regulations with respect to the payment systems and SSS, by the CBRT. The CMB has articulated its powers with respect to the CCPs and SSS. However its powers with respect to the TRs have not been explicitly articulated yet. At this point, however there are no TRs in Turkey. The CMB has licensed the MKK to function as a TR. However prior to its becoming operational, the CMB intends to issue specific regulations.</p> <p>The CBRT and the CMB has adequate resources and qualified staff to carry out its oversight and regulatory responsibilities with respect to the FMIs in its oversight. The CBRT has specific designated staff for carrying out the oversight activities. The CMB’s oversight activities are housed in a department which also includes regulation and supervision of brokers and also the BIST.</p>
<i>Assessment of Responsibility B</i>	Broadly Observed
<i>Recommendations and comments</i>	<p>The CMB could consider assigning specific responsibilities to staff with respect to the FMIs in its scope. The CMB should issue the regulations related to TRs ahead of MKK commencing its operations.</p>

Responsibility C: Disclosure of policies with respect to FMIs

Central banks, market regulators, and other relevant authorities should clearly define and disclose their regulatory, supervisory, and oversight policies with respect to FMIs.

Key consideration 1

Authorities should clearly define their policies with respect to FMIs, which include the authorities' objectives, roles, and regulations

Description

CBRT

The CBRT is responsible for the regulation and oversight of payment and securities settlement systems in Turkey. The PSL aims to regulate the procedures and principles regarding these systems.

The CBRT also published³⁰ a policy statement titled "Objectives and Policies Regarding Payment and Securities Settlement Systems":

".....

In this context, by taking into account the relevant national regulations and international practices and standards, the CBRT's main objective regarding payment and securities settlement systems and its oversight activities to be carried out in this area, is to ensure the "safe, uninterrupted, efficient and effective functioning of the systems".

Main policies and activities pursued by the CBRT in order to achieve this objective, which is critical for sustaining financial stability and for effective implementation of monetary policy, are as follows:

- *Making the necessary regulations, which are up to date and in compliance with international standards.*
- *Conducting oversight of the systems in order to ensure their compliance with national and international regulations and standards.*
- *Ensuring the systems to operate in compliance with the "Principles for Financial Market Infrastructures" issued jointly by the Committee on Payment and Settlement Systems (CPSS) and the International Organization of Securities Commissions (IOSCO).*
- *Monitoring the national and international developments which may affect the effectiveness and the safety of the systems.*
- *Ensuring and maintaining the confidence in the systems.*
- *Carrying out activities regarding the systems in cooperation with the authorities, which are responsible for supervision of the financial system, the system operators and the system participants."*

CMB

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<http://www.tcmb.gov.tr/wps/wcm/connect/TCMB+EN/TCMB+EN/Main+Menu/PAYMENT+SYSTEMS/Objec tives+and+Policies>

	<p>CMB policies with respect to CCPs, including its roles and regulations are clearly defined in Article 78 of CML as well as in the bylaw on “Central Counterparty Applications of Istanbul Clearing And Settlement Bank”.</p> <p>Moreover the objective of CMB to regulate CCPs is to protect the financial stability of the capital markets as specified in Art 78 (1) and explicitly classifies these institutions as systemically important in the same article. CMB’s roles and regulations are explicitly mentioned both in CML Article 78 and in the bylaw on “Central Counterparty Services of Takasbank”.</p> <p>The objective of CMB to regulate CCPs is also explained in the rationale for Article 78 of the CML as given below.</p> <p><i>“The settlement finality of transactions in financial markets manifests itself in the existence and sustainability of the system in general. The settlement finality of transactions in financial markets, beyond ensuring investors’ trust, is also crucial in minimizing the systemic risk. Within this context, with this Article, for the first time in the Turkish regulations, the settlement finality of transactions in Turkish financial markets are guaranteed and the related infrastructure is being built. Also taking into consideration that the collaterals of investors will be used in settlement finality, such collaterals are preserved against attachments, pledges or other similar civil applications.”</i></p> <p>For CSDs, CMB’s objectives, roles and authorities are clearly defined in CML (Articles 80, 81 and 128) and in secondary regulations (Regulation on the Establishment, Operation, Conduct and Audit Principles of the Central Securities Depository and the Communiqué on the Procedures and Principles for the Book Keeping of Dematerialized Capital Market Instruments).</p> <p>The CMB also published ³¹a "policy statement" expressing that</p> <p><i>“...by taking into account the relevant national regulations and international practices and standards, the CMB’s main objectives regarding financial market infrastructures and its oversight activities to be carried out in this area, is to ensure the safe, uninterrupted, efficient and effective functioning of capital markets.”</i></p> <p>Main policies and activities pursued by the CMB in order to achieve this objective, which is critical for sustaining stability of capital markets and fostering a safe environment for investors, are as follows:</p> <ul style="list-style-type: none"> • Making the necessary regulations, which are up to date and in compliance with international standards. • Conducting oversight of the FMIs in order to ensure their compliance with national and international regulations and standards. • Ensuring the FMIs operate in compliance with the CPMI-IOSCO PFMI. • Carrying out activities regarding the FMIs in cooperation with the authorities, which are responsible for supervision of the financial system, FMIs and their beneficiaries.
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<http://www.spk.gov.tr/duyurugoster.aspx?aid=20160323&subid=0&ct=c&yanmenuid=1>

	<p>The legal basis of these policies and activities is the article 128 of CML where, among others, the duties and authorities of the Board are stated as follows:</p> <p>“</p> <ul style="list-style-type: none"> - <i>a) Carrying out the tasks and activities for fulfilling the duties and implementations imposed by this Law and ensuring the foreseen results</i> - <i>Taking general and special decisions in order to ensure timely, adequate and accurate public disclosure</i> - <i>Exchanging information and cooperating in any manner with other financial regulatory and supervisory institutions in order to ensure financial stability and fulfil the requirements of national or international legislation</i> - <i>Participating to the works conducted by international institutions, financial, economic and professional organizations where the Board is a member as well as the works carried out by international institutions where Turkey is directly a member, developing common projects with those institutions and contributing to their projects</i> <p>“</p>
Key consideration 2	Authorities should publicly disclose their relevant policies with respect to the regulation, supervision, and oversight of FMIs.
Description	<p><u>CBRT</u></p> <p>The relevant policies are disclosed by the aforementioned policy statement which is published on the website of the CBRT.</p> <p><u>CMB</u></p> <p>All rules and regulations as well as duties, authorities and responsibilities of CMB are publicly disclosed on CMB’s website. The relevant policies are disclosed by the aforementioned policy statement which is published on the website of the CMB as well.</p>
Key conclusions for Responsibility C	The CBRT and the CMB have articulated their policies with respect to FMIs through a policy statement issued on their respective websites. The policy statements are consistent with the respective legal powers and regulations issued by these authorities.
Assessment of Responsibility C	Observed.
Recommendations and comments	

<p>Responsibility D³²: Application of the principles for FMIs Central banks, market regulators, and other relevant authorities should adopt <i>the CPSS-IOSCO Principles for financial market infrastructures</i> and apply them consistently</p>	
<p>Key consideration 1</p>	<p>Authorities should adopt the CPSS-IOSCO Principles for financial market infrastructures</p>
<p>Description</p>	<p><u>CBRT</u></p> <p>The CBRT’s main objective regarding payment and securities settlement systems and their oversight activities to be carried out in this area, is to ensure the “safe, uninterrupted, efficient and effective functioning of the systems”. As stated in the aforementioned policy statement, ensuring the systems to operate in compliance with the PFMI is one of the main policies and activities of the CBRT regarding payment and securities settlement systems.</p> <p>The CBRT has also based the ROPSS and ROSPSS on the PFMI.</p> <p><u>CMB</u></p> <p>Article 78 of CML is written in consideration to the principles and the PFMI have been adopted where possible in the preparation of the bylaw on CCP applications of Takasbank as well as in the preparation of directives and the procedures of Takasbank as the CCP.</p> <p>As stated in the policy statement mentioned earlier, ensuring the FMIs to operate in compliance with the “Principles for Financial Market Infrastructures” issued jointly by the CPMI and the IOSCO is one of the main policies and activities of the CMB regarding financial market infrastructures including CCPs, CSDs and TRs.</p> <p>MKK has been authorized by CMB to operate as a TR in Turkey but it is not active. As of now, there is no implementing regulation in force yet. However, the “Implementing Regulation on Procedures Concerning TR’s Activities” and “The Communiqué on Reporting Obligations to TRs” have been drafted and sent to related authorities and professional associations for consultation or proposal in March 2016. Once these are adopted, first reporting of transactions are expected to take place as of 2017.</p>
<p>Key consideration 2</p>	<p>Authorities should ensure that these principles are, at a minimum, applied to all systemically important payment systems, CSDs, SSSs, CCPs, and TRs</p>
<p>Description</p>	<p><u>CBRT</u></p> <p>The CBRT applies the PFMI to all systemically important payment and securities settlement systems in Turkey.</p> <p>In the policy statement called “Objectives and Policies Regarding Payment and Securities Settlement Systems”, the CBRT states that it aims to ensure the systems to operate in compliance with the PFMI. At this point, the CBRT does not make any differentiation among payment and securities settlement systems for the application of PFMI.</p> <p>The CBRT has completed the self-assessment of the EFT and ESTS system. The Taskasbank and MKK have also been asked to complete the self-assessment as</p>

³² The CBRT is assessed with a rating of “Observed” for Responsibility D during CPMI-IOSCO Level 2-3 Implementation Monitoring Activities for Responsibilities of relevant authorities for financial market infrastructures.

	<p>SSS's and the Takasbank has already completed the disclosure framework and has published it on its website.</p> <p><u>CMB</u></p> <p>CMB applies PFMI to CSDs, CCPs and TRs. In the policy statement CMB has published, it is explicitly stated that PFMI apply to all FMIs under supervision of CMB including central counter parties, central securities depositories and trade repositories operating in Turkey.</p> <p>The CMB has already asked the MKK and Takasbank to complete self-assessments against the PFMI and these have completed them and have submitted to the CMB. The Takasbank has also finalized the disclosure framework and has published it on its website.</p>
<p>Key consideration 3</p>	<p>Authorities should apply these principles consistently within and across jurisdictions, including across borders, and to each type of FMI covered by the principles</p>
<p>Description</p>	<p><u>CBRT</u></p> <p>The regulations are applied to all payment and securities settlement systems Turkey. There is no differentiation CBRT operated or private sector operated FMIs. However by its nature, there are some exceptions regarding specific principles and KCs to the payment and securities settlement system owned and operated by the CBRT.</p> <p>The CBRT owns and operates a payment and securities settlement system. On the other hand, there are private sector owned payment and securities settlement systems. However the CBRT is responsible for the regulation and oversight of all payment and securities settlement systems in Turkey. In the CBRT, separate divisions are responsible for the operation and oversight of the payment and securities settlement systems, and those separate divisions report to different Deputy Executive Directors.</p> <p>In the policy statement, CBRT has stated that all the systems in Turkey should adopt PFMI. If any system doesn't comply with the principles, according to Article 9 (1)-b of the PSL, the CBRT can take the appropriate measures listed in the Article 9/2.</p> <p><i>Incidents which require taking measures and measures to be taken</i></p> <p><i>PSL, Article 9(1):" The Bank takes the appropriate measures with respect to the operation of the system in case of detection of the following incidents:</i></p> <p>...</p> <p><i>b) Acting contrary to this Law and the regulations issued pursuant to this Law.</i></p> <p>... ”</p> <p><u>CMB</u></p>

	<p>In the policy statement that has been published, the CMB has announced that the regulations of CMB are in compliance with CPMI-IOSCO PFMI and all FMIs operating in Turkey, under its jurisdiction, should adopt PFMI.</p> <p>Additionally in the policy statement, ensuring that the FMIs to operate in compliance with the PFMI is listed among the main policies pursued by the CMB in order to ensure the safe, uninterrupted, efficient and effective functioning of capital markets.</p> <p>The principles are applied to all FMIs under supervision of CMB regardless of the ownership structures that are regulated with CML.</p> <p>The CMB has the powers as noted in the discussion on Responsibility A and B, to require the FMIs to address any gaps identified in the assessments against the PFMI.</p>
<i>Key conclusions for Responsibility D</i>	<p>The CBRT and the CMB have issued policy statements articulating their adoption of the PFMI. In the case of the CBRT it has required all the payment and securities settlement systems in its purview to adopt the PFMI and has already completed the self-assessment against the PFMI for the FMIs operated by it. The CBRT in addition has asked the Takasbank and the MKK, to complete self-assessments as SSS.</p> <p>The CMB has sought the Takasbank and the MKK to complete self-assessments as CCP and CSD respectively.</p>
<i>Assessment of Responsibility D</i>	Observed
<i>Recommendations and comments</i>	

Responsibility E³³: Cooperation with other authorities

Central banks, market regulators, and other relevant authorities should cooperate with each other, both domestically and internationally, as appropriate, in promoting the safety and efficiency of FMIs.

Key consideration 1	Relevant authorities should cooperate with each other, both domestically and internationally, to foster efficient and effective communication and consultation in order to support each other in fulfilling their respective mandates with respect to FMIs. Such cooperation needs to be effective in normal circumstances and should be adequately flexible to facilitate effective communication, consultation, or coordination, as appropriate, during periods of market stress, crisis situations, and the potential recovery, wind-down, or resolution of an FMI
Description	<p><u>CBRT</u></p> <p>The CBRT is one of the regulatory, supervisory and oversight authorities for payment and securities settlement systems. The other authority in securities settlement systems area is the CMB. The CBRT and CMB discuss and cooperate with other authorities regarding specific issues under the Financial Stability Committee (FSC). This committee is primarily responsible for financial stability and systemic risk which also includes the area regarding FMIs.</p> <p>The FSC provides the coordination for the cooperation among relevant authorities with respect to FMIs in Turkey. The committee comprises of the heads of the BRSA, the CMB, the CBRT, Saving Deposits Insurance Fund, and the Undersecretariat of Treasury. The chair of the FSC is the Minister in charge of the Undersecretariat of the Treasury, currently the Deputy Prime Minister (DPM).</p> <p>The FSC provides the coordination for the cooperation among relevant institutions on FMIs in Turkey. One of the main duties of the FSC is to determine and monitor systemic risks and to identify necessary measures and policy proposals in order to mitigate them. In this context, participating authorities also can discuss how they can support each other while fulfilling their responsibilities.</p> <p>Additionally there are mandatory bilateral information sharing and also ad-hoc cooperation initiatives as mentioned in Responsibility E KC 3, among relevant authorities in Turkey regarding the payment and securities settlement systems. All of these cooperation methods foster efficient and effective communication.</p> <p>During times of market stress or crisis situations, the FSC gathers the views of all the participants and by the help of the cooperation the decisions are made faster and more efficiently.</p>

³³ The CBRT is assessed with a rating of “Observed” for Responsibility E during CPMI-IOSCO Level 2-3 Implementation Monitoring Activities for Responsibilities of relevant authorities for financial market infrastructures.

	<p><u>CMB</u></p> <p>To foster the cooperation amongst CMB, CBRT and BRSA for their various responsibilities with respect to the Takasbank and MKK, frequent meetings among institutions are held for consultations on important or conflicting issues when necessary.</p> <p>All the cooperation arrangements by or including CMB derive their legal basis from the Article 128 (1-ç) of the CML that gives the duty to exchange information and cooperate in any manner with other financial regulatory and supervisory institutions in order to ensure financial stability or fulfil the requirements of national or international legislation to the CMB.</p> <p>In terms of trade reporting, banks deal with derivatives pre-dominantly in OTC mode and the BRSA has already been collecting derivatives data from banks. The BRSA experts share their experiences and information about the dynamics of the markets and participants. The CBRT makes contributions with respect to the international regulations and relations. The CMB as authorized by law, leads the project. In terms of OTC market reform, all regulatory authorities have developed an efficient and effective communication and consultation environment.</p>
Key consideration 2	If an authority has identified an actual or proposed operation of a cross-border or multicurrency FMI in its jurisdiction, the authority should, as soon as it is practicable, inform other relevant authorities that may have an interest in the FMI's observance of the CPSS-IOSCO Principles for financial market infrastructures.
Description	<p><u>CBRT</u></p> <p>Takasbank provides multicurrency services. Takasbank (SSS) processes transactions in USD and EUR. But CBRT did not notify other related central banks and relevant authorities on these operations because of low transaction volume (Takasbank's total trading volume in 2015 for all the foreign currencies is around 350 million US dollars).</p> <p><u>CMB</u></p> <p>MKK as a CSD, has a link with the Austrian Central Securities Depository (OeKB) for free of payment transfers of securities and corporate actions that are listed on both Vienna stock exchange and BIST.</p> <p>Foreign CSDs' opening accounts at MKK and MKK's opening accounts at foreign CSDs are subject to the approval of the Board of Directors of the CMB according to the regulations. The CBRT is also informed about these.</p>
Key consideration 3	Authorities should apply these principles consistently within and across jurisdictions, including across borders, and to each type of FMI covered by the principles
Description	<p><u>CBRT</u></p> <p><i>Forms of cooperation</i></p> <p>The relevant authorities cooperate through the FSC. The FSC provides the forum for the cooperation among relevant institutions on FMIs in Turkey.</p>

	<p>In addition to this, there is bilateral information sharing obligation among authorities with respect to relevant regulations.</p> <p>Additionally relevant authorities use ad-hoc methods like the ones mentioned below for cooperation in Turkey;</p> <ul style="list-style-type: none"> -Informal communications with related authorities. -Arranging meetings on issues regarding the related authorities. -Consulting other related authorities on issues that may affect the decisions of other authorities or on new regulations related to FMIs. -Cooperation by forming ad-hoc working groups. <p>In addition there is a Financial Sector Committee which comprises of the representatives of the same institutions as in the FSC, represented at a more operational level. This meets twice a year and FMIs are also discussed in this committee.</p> <p><i>Efficiency and effectiveness of cooperation</i></p> <p>In the FSC there are five participant authorities. The Undersecretariat of the Treasury is responsible for managing the FSC and promotes efficiency and effectiveness by taking the views of the participants. So the cooperation in the committee ensures efficiency and effectiveness in terms of decisions to be made in the payments area.</p> <p>Furthermore, the ad-hoc cooperation methods mentioned above can also be effective during the periods when authorities need to cooperate swiftly.</p> <p><u>CMB</u></p> <p><i>Forms of cooperation</i></p> <p>According to Article 128 (1-ç) of the CML, one of the duties of the CMB is to exchange information and cooperate in any manner with other financial regulatory and supervisory institutions in order to ensure financial stability and fulfil the requirements of national or international legislation.</p> <p><i>Efficiency and effectiveness of cooperation</i></p> <p>The authorities are in constant communication with each other and there is easy access to related personnel. Ad-hoc cooperation methods mentioned above are also used during the periods when authorities need to cooperate swiftly.</p> <p>The FSC provides a forum to secure consensus of all the relevant agencies with respect to areas related to financial stability and the overall financial sector topics.</p>
Key consideration 4	<p>For an FMI where cooperative arrangements are appropriate, at least one authority should accept responsibility for establishing efficient and effective cooperation among all relevant authorities. In international cooperative arrangements where no other authority accepts this responsibility, the presumption is the</p>

	authority or authorities with primary responsibility in the FMI's home jurisdiction should accept this responsibility
Description	<p>The FSC is responsible for establishing efficient and effective cooperation among all relevant authorities. The Undersecretariat of the Treasury is responsible for the functioning of the FSC.</p> <p>All authorities are responsible for acting on issues under their jurisdictions according to their relevant legal powers.</p> <p>The results of the FSC meetings and the decisions of the committee are presented to the Council of Ministers by, the Chair of the FSC.</p> <p>In cases where a negative development that could spread over to the entire financial system occurs and such development is detected by the FSC, the Council of Ministers shall be in charge to determine the measures to be taken and all the relevant institutions and agencies are competent and responsible for promptly implementation of measures taken.</p> <p>In this context, The Undersecretariat of the Treasury set the meeting dates, determines the agenda and informs the participants regarding the next steps.</p>
Key consideration 5	At least one authority should ensure that the FMI is periodically assessed against the principles and should, in developing these assessments, consult with other authorities that conduct the supervision or oversight of the FMI and for which the FMI is systemically important
Description	<p><u>CBRT</u></p> <p>The CBRT ensures that the payment and securities settlement systems are periodically assessed against the PFMI. Additionally, the CBRT oversees these systems pursuant to the PSL. The CBRT also cooperates with other authorities that conduct the supervision/oversight of the systemically important payment and securities settlement systems in Turkey.</p> <p>The specific legal basis for oversight derives from the PSL, article 8 (1). Also the payment and securities settlement systems perform self-assessments pursuant to Article 8 of ROSPSS once a year.</p> <p>The specific provisions of the ROSPSS are:</p> <p>“</p> <p><i>Article 8– (1) The system operator shall carry out self-assessment related to the system at least once a year and share the self-assessment report with the Central Bank of the Republic of Turkey.</i></p> <p><i>(2) Self-assessment activities that are performed pursuant to the first paragraph of this Article shall be carried out so as to measure system operator's observance level to policy, rules, principles, standards and such considerations declared by the Central Bank of the Republic of Turkey with regard to the systems.</i></p> <p><i>(3) Self-assessment that is carried out by the system operator constitutes inputs to oversight activities that are conducted by the Central Bank of the</i></p>

	<p><i>Republic of Turkey , but it is not binding for the assessments the Central Bank of the Republic of Turkey related to the system.</i></p> <p><i>(4) The Central Bank of the Republic of Turkey is authorized to set out the principles and procedures related to self-assessment activities that are conducted by the system operator.</i></p> <p>“</p> <p>According to Articles 9 (15), 9 (16) and 9 (28) of the ROPSS, in case that the subject of activity of the applicant institution is under the scope of another regulation, the CBRT shares information with the related authority regarding the application for license. The specific provisions are as below:</p> <p>“</p> <p>Article 9- <i>(15) In case that the subject of activity of the applicant institution is under the scope of Capital Market Law No. 6362, dated 6/12/2012, Bank shall share information with Capital Market Board regarding the operation license application . The Capital Market Board shall share information with the Central Bank of the Republic of Turkey regarding applications made to the Capital Market Board, in case applicant institution is a system operator.</i></p> <p><i>(16) In case that the subject of activity of the applicant institution is under the scope of Banking Law No. 5411, dated 19/10/2005 or Bank Cards and Credit Cards Law No. 5464, dated 23/2/2006, Bank shall share information with the Banking Regulation and Supervision Agency regarding operation license application. The Banking Regulation and Supervision Agency shall share information with the Central Bank of the Republic of Turkey regarding applications made to the Banking Regulation and Supervision Agency, in case applicant institution is a system operator.</i></p> <p>”</p> <p>The ROPSS, article 28 also articulates the provisions related to the co-operation with the CMB and the BRSA. The specific provisions are”</p> <p>“</p> <p>Article 28- <i>(1) Developments regarding the system operator and system participants to be notified to Banking Regulation and Supervision Agency and Capital Markets Board in accordance with the relevant legislations or detected by themselves, and that may disrupt smooth operation of the system, shall be shared with the Central Bank of the Republic of Turkey by these authorities.</i></p> <p><i>(2) The Central Bank of the Republic of Turkey shall share the developments which are notified to the Central Bank of the Republic of Turkey pursuant to the legislations or which are detected by the Central Bank of the Republic of Turkey, itself, and that can disrupt smooth functioning of the system with competent authorities. Among these developments, the Central Bank of the Republic of Turkey shall share the ones that may disrupt the smooth operation of the institutions operating under the scope of Law Nr.5411 or Law Nr.5464 with the Banking Regulation and Supervision Agency; and the ones that may have a negative impact on smooth operation of the institutions operating under the scope of Law Nr.6362 with the Capital Market Board.</i></p> <p>“</p>
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CMB

CCPs are supervised, overseen and regulated by the CML, article 78 that gives the authority to the CMB. The specific provisions are:

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Article 78/3: Principles regarding guarantees that central clearing institutions that are to provide central counterparty services would take from their members as well as principles concerning the guarantee fund within their organization shall be determined by the Board upon the proposal of the related clearing institution.

Article 78/4: For capital market instruments subject to the central counterparty practice, conditions related to clearing membership and membership types including the obligations of members and minimum requirements concerning capital, internal audit and risk management shall be established by the related clearing institution upon taking the approval of the Board,

Article 78/5: Central clearing institutions that are to provide central counterparty services must have and maintain an adequate level of capital in line with the financial risks they have undertaken in the related capital market instruments and other risks, establish and maintain a data processing infrastructure as well as internal control, risk management and internal audit systems. The internal audit units of these institutions are obliged to control the reliability and adequacy of their risk management and data processing infrastructures as a minimum at six month intervals and to notify the Board of the results. The Board may decide the related control be made more frequently and require an independent audit to be conducted with regard to the issues mentioned above. Furthermore, the Board is authorized to require the financial adequacy of the institution that is to provide central counterparty services to be assessed with methods it would specify, including stress tests, and to request a credit rating to be assigned in cases where it deems necessary.

Article 78/6: In order to maintain financial stability, The Board may impose additional obligations including capital requirements on these institutions of systemic importance and their members.

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On the other hand, the bylaw on CCP services of Takasbank contains detailed requirements for Takasbank as a CCP. The policy statement issued by the CMB determines the general periodic assessments of FMIs against the principles under the supervision of CMB.

Additionally, according to Article 128 of the CML, one of the responsibilities of CMB is to exchange information and cooperate in any manner with other financial regulatory and supervisory institutions in order to ensure financial stability and fulfil the requirements of national or international legislation.

Within this context, under normal circumstances, CMB shares assessments with other authorities on demand or will consult on issues that may cause conflicts. Other than these the CMB can share assessments when there are material risks noted or discovered as part of review of the assessments that

	may cause problems or may affect the evaluations of other authorities regarding the FMIs.
Key consideration 6	When assessing an FMI’s payment and securities settlement arrangements and its related liquidity risk-management procedures in any currency for which the FMI’s settlements are systemically important against the principles, the authority or authorities with primary responsibility with respect to the FMI should consider the views of the central banks of issue. If a central bank of issue is required under its responsibilities to conduct its own assessment of these arrangements and procedures, the central bank should consider the views of the authority or authorities with primary responsibility with respect to the FMI
Description	<p>The CBRT, as the regulatory and oversight authority for payment and securities settlement systems, assesses the FMI’s payment and securities settlement arrangements and its related liquidity risk management procedures for all of the currencies which are subject to the transactions processed in the FMI.</p> <p>The CBRT is the primary authority for the regulation and oversight of payment and securities settlement systems and it is the only issuer for TRY.</p> <p>Takasbank (SSS) processes transactions in USD and EUR. But CBRT did not notify other related central banks and relevant authorities on the operations of the FMI because of low transaction volume (Takasbank’s total trading volume in 2015 for all the foreign currencies is 350 million US dollars).</p> <p>The CBRT has the powers to seek and share information from relevant central banks and other authorities, if needed.</p>
Key consideration 7	Relevant authorities should provide advance notification, where practicable and otherwise as soon as possible thereafter, regarding pending material regulatory changes and adverse events with respect to the FMI that may significantly affect another authority’s regulatory, supervisory, or oversight interests.
Description	<p><u>CBRT</u></p> <p>The ROPSS, article 28, explicitly lays out the sharing of information on any incidents or developments with any payment and securities settlement systems in its oversight. The article also enjoins other regulators and authorities to notify the CBRT if they become aware of any issues which may affect the functioning of the payment and securities settlement systems in the purview of the CBRT.</p> <p>The specific provisions are presented below:</p> <p>“</p> <p><i>Article 28- (1) Developments regarding the system operator and system participants to be notified to Banking Regulation and Supervision Agency</i></p>

and Capital Markets Board in accordance with the relevant legislations or detected by themselves, and that may disrupt smooth operation of the system, shall be shared with the Central Bank of the Republic of Turkey by these authorities.

(2) The Central Bank of the Republic of Turkey shall share the developments which are notified to the Central Bank of the Republic of Turkey pursuant to the legislations or which are detected by the Central Bank of the Republic of Turkey, itself, and that can disrupt smooth functioning of the system with competent authorities. Among these developments, the Central Bank of the Republic of Turkey shall share the ones that may disrupt the smooth operation of the institutions operating under the scope of Law Nr.5411 or Law Nr.5464 with the Banking Regulation and Supervision Agency; and the ones that may have a negative impact on smooth operation of the institutions operating under the scope of Law Nr.6362 with the Capital Market Board.

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The CBRT takes and considers the view of other authorities, as and when needed. For instance, during the preparation of the PSL and the secondary regulations, the CBRT sought the views of the CMB and the BRSA and also other stakeholders and addressed them accordingly.

CMB

According to Article 128 (1-ç) of the CML, one of the responsibilities of the CMB is to exchange information and cooperate in any manner with other financial regulatory and supervisory authorities in order to ensure financial stability and/or fulfil the requirements of national or international legislation.

CMB, BRSA and CBRT provide advance notification and get consultation for all pending material regulatory changes and adverse events with respect to MKK and Takasbank that may significantly affect the respective regulatory, supervisory or oversight interests of CBRT within the limits of CML.

Information sharing with foreign authorities are covered by the article 128 (1-d) of CML, as one of the responsibilities of the CMB:

“Cooperating in any manner in relation to capital markets and signing bilateral or multilateral memoranda of understanding in accordance with the principles of reciprocity and the protection of professional confidentiality, with corresponding foreign institutions that are authorised to regulate and supervise capital markets, in order to exchange information, meet requests for document, inspecting the headquarters, branch offices or subsidiaries or affiliates located in Turkey of institutions performing activities in the capital markets of foreign countries as well as in the bodies from which they outsource within the framework of a written contract and to take the necessary administrative measures, share the expenditures related to the activities to be carried out in this context”

Additionally, CMB as the supervisory and oversight authority for CCPs, CSDs and TRs considers the views of other relevant authorities as appropriate and make necessary amendments or take necessary actions with best effort and good faith along with considerations to the restrictions in CML, if any.

	For example, during the drafting and adoption of the CML and the bylaw on CCP Services of Takasbank, the CMB sought the views of the CBRT, BRSA and other related authorities and made necessary amendments where appropriate.
Key consideration 8	Relevant authorities should coordinate to ensure timely access to trade data recorded in a TR.
Description	<p><u>CBRT</u></p> <p>The CBRT does not regulate or oversee a TR.</p> <p><u>CMB</u></p> <p>Article 87 (3) of CML covers the access to the trade recorded in a TR. The article states that “Sharing of information kept at trade repositories with third persons, including public legal entities, shall be subject to the approval of the Board. The legislation concerning the usage of personal data shall be complied with in the implementation of this paragraph.”</p> <p>The CMB has prepared the secondary regulation for TRs and is in the process of stakeholder consultation.</p>
Key consideration 9	Each authority maintains its discretion to discourage the use of an FMI or the provision of services to such an FMI if, in the authority’s judgment, the FMI is not prudently designed or managed or the principles are not adequately observed. An authority exercising such discretion should provide a clear rationale for the action taken both to the FMI and to the authority or authorities with primary responsibility for the supervision or oversight of the FMI.
Description	<p>The article 9 (1.c) of the PSL empowers to take a set of actions outlined in article 9.2 of the PSL, in the event that the CBRT notes any impact to safety, stability and soundness of the system. The article 9 (3), requires the operator of the payment and securities settlement system to be notified of any action that will be taken. The Article 9.1 also covers other scenarios like the operator is not managing the system in accordance with the law or is functioning against the terms of license.</p> <p>The article 96,97,98 and 103 of the CML, provides is a broad range of powers to apply fines, seek changes in policies and procedures and also change in management in the event of any unlicensed activities, deterioration in financial position and failure to adhere to any regulations or directives from the CMB.</p> <p>The general provisions related to sharing information amongst the BRSA, CMB and the CBRT discussed earlier are applicable in these scenarios as well.</p> <p>Having said this, so far, the CBRT and the CMB have never needed to exercise discretion to discourage the use of an FMI, or the provision of services to an FMI, on the grounds that it is not prudently designed or managed, or the principles are not adequately observed.</p>

Key consideration 10	Cooperative arrangements between authorities in no way prejudice the statutory or legal or other powers of each participating authority, nor do these arrangements constrain in any way an authority's powers to fulfil its statutory or legislative mandate or its discretion to act in accordance with those powers.
	The co-operative arrangements are consistent with the legal and regulatory powers of the respective authorities.
<i>Key conclusions for Responsibility E</i>	<p>The legal and regulatory measures governing the functioning of the CBRT and the CMB allow data sharing amongst them and with other related authorities, in particular the BRSA which regulates the Takasbank as a banking institution.</p> <p>The FSC provides the structured mechanism for sharing, analyzing and resolving any issues related to the financial sector that may impact financial stability. This mechanism is also used for FMI related discussions.</p> <p>There are also other ad-hoc mechanisms in place to share and seek information and collaborate on an as needed basis.</p>
<i>Assessment of Responsibility E</i>	Observed
<i>Recommendations and comments</i>	

AUTHORITIES RESPONSE

The CMB and the CBRT strongly support the Financial Sector Assessment Program (FSAP) performed by the International Monetary Fund and World Bank and believe in its contributions to the efforts for enhancing the soundness of financial market infrastructures in member countries.

The assessment's results gave relevant authorities an external opinion on the condition of the FMIs in Turkey and helped them to understand the issues that require attention in this area. The CBRT is pleased that the FSAP team's assessment of the CBRT's payment and securities settlement systems and the relevant authorities broadly indicates compliance with the principles and Responsibilities mentioned in PFMIs and in general, the CBRT agrees with the findings and assessments of the FSAP team and appreciates the recommendations for further improvement of the CBRT's payment and securities settlement systems.

On the other hand the Turkish authorities welcome the opportunity to mention the following comments:

CBRT's Official Comments on Assessment of Observance of the PFMIs for CBRT's Payment and Securities Settlement Systems

Principle 3 (Framework for the Comprehensive Management of Risks)

The Risk Management Framework (RMF) of the CBRT Payment Systems was referring to the interlinked FMIs.

By considering the FSAP recommendation, the Risk Management Framework (RMF) has been reviewed and modified to explicitly emphasize that all risks related with systems' participants and the ones arising from or to linkages and interdependencies including the interlinked FMIs and third-party service providers are considered while the risks are mitigated. The revised RMF is being used in its 2016 application.

Principle 7 (Liquidity Risks)

As stated in the FSAP report, "the CBRT itself is not exposed to any liquidity risk as the operator of the EFT System."

However, despite the fact that the PFMI itself highlights the liquidity risk of the FMI operator rather than that for the participants, and that all the key questions of the Assessment Methodology are related to the liquidity risk of FMI operator and there is no specific key question on the liquidity risk for the participants, the recommendations and the assessment regarding the Principle 7 focus on the liquidity risk for the participants. Hence, the CBRT believes that the current assessment and rating does not reflect the compliance level of the EFT System with respect to Principle 7.

Principle 13 (Participant Default Rules and Procedures)

Although the Default Management Procedure for the Participants of the CBRT Payment Systems has not been tested as a whole together with the participants yet, the facilities used in

the procedure were tested together with the participants. The CBRT has planned a test for the procedure in its yearly test plan, but does not deem necessary to include all the participants in the test.

Principle 17 (Operational Risk)

Currently, the provisions of the Emergency Guide of the CBRT Payment Systems support the PSOR provisions related to the operational risk. The Business Continuity Application Plan of the PSD (BCAP) has recently been developed in line with the CBRT's institutional business continuity study and will replace the existing documents. A part of the BCAP, the Participant Guideline, which is soon to be finalized upon the feedback of the participants, includes provisions to meet the recommendation on including specific mandates with respect to business continuity management for its participants and having a mechanism to access compliance.

The CBRT has already identified the critical participants of the Systems through a network analysis based on sink-rank model. The CBRT has started to work more closely with these participants and plans to apply more stringent operational risk management measures for them. In this regard, a working group on operational risk was also founded at the Banks Association of Turkey with the participation of systemically important participants and the CBRT.

Moreover, the CBRT has already been working on the issues related to the recommendations to incorporate more structural assessment of operational risk for other FMIs and to include more complex scenarios in the revised continuity plan as a result of this assessment. As stated in the response to the assessment of the Principle 3, the revised RMF explicitly considers the risks related to the interlinked FMIs, and based on this consideration two FMIs, which are also participants of the CBRT Payment Systems, have been identified as critical participants.

Principle 19 (Tiered Participant Arrangements)

The financial sector of Turkey is mainly composed of banks and all banks except a very small one are direct participants of the CBRT Payment Systems. Nevertheless, for the fulfillment of the PFMI's recommendations on tiered participation, the CBRT has instituted a mechanism by using its power in PSOR in order to assess the risks arising from the tiered arrangements. To this end, the CBRT has started to collect and analyze the relevant information from the System's participants about their non-bank financial customers through periodical questionnaires.

CMB's Official Comments on Assessment of Observance of the Responsibilities of Relevant Authorities for FMIs

The CMB would like to extend its sincerest thanks to FSAP team for carrying out the assessment of observance of the CPMI-IOSCO principles for financial market infrastructures. The detailed assessment of responsibilities of CMB has served a great opportunity to CMB to detect the areas which need improvement.

The CMB is committed to follow PFMI for the FMIs under its responsibility and has the goal to work towards implementing the FSAP's recommendations.

On the other hand, the CMB also wishes to underline some issues regarding FSAP's recommendations to serve a better understanding of CMB's road map and some practical issues

Under Authorities Responsibility A, the assessment refers to lack of regulatory framework for TRs and recommends the CMB should ensure that it issues a regulation/communiqué on TRs, before it accords approval to the MKK to commence its operations as a TR.

The Implementing Regulation on Procedures Concerning TR's Activities and The Communiqué on Reporting Obligations to TRs have been drafted and sent to related authorities and professional associations for consultation or proposal in March 2016. Trade reporting requirements and MKK's operational conditions are regulated through these regulations. The draft regulations are planned to be revised based on the proposals received and finalized in the second half of 2016. After adoption of the regulations, related parties will be given time for adaptation. First reporting of transactions are expected to take place as of 2017.

The recommendation under the Authorities Responsibility B requires CMB to consider assigning specific responsibilities to staff with respect to the FMIs in its scope.

Before being merged with Intermediary Activities Department as a result of an organizational re-structuring process, formerly Market Oversight and Regulation Department of CMB used to be exclusively responsible for central clearing and central depository institutions as well as exchanges. After merger, the Intermediary Activities Department is responsible for FMIs as well as investment firms and investment services. Thus, employees of this department are working on both fields as a result of their job definitions.

The Turkish authorities look forward to continuing the dialogue with the FSAP team to work to improve the FMIs in Turkey.