

IV. FINANCIAL INFRASTRUCTURE

The increased number of transactions in the integrated global financial markets and the consequential accelerated movement of funds highlight the importance of payment systems.

The existence of an efficient, secure payment system that is in accordance with international standards ensures the healthy functioning of the financial system and increases its efficiency through minimizing the potential risks. As this aspect of payment systems contributes to the applicability of monetary policies and financial stability in general, central banks undertake responsibility for smooth functioning of payment systems.

This section presents the recent developments in the Turkish Interbank Clearing-Real Time Gross Settlement System(TIC-RTGS), through which real-time settlement of transactions in Turkish Lira are realized; the Turkish Interbank Clearing-Electronic Securities Transfer and Settlement System (TIC-ESTS), which facilitates the dematerialized and real-time transfer and settlement of securities in electronic form; the cheque clearing system that enables clearing of cheques on accounts among banks and the card based payment system.

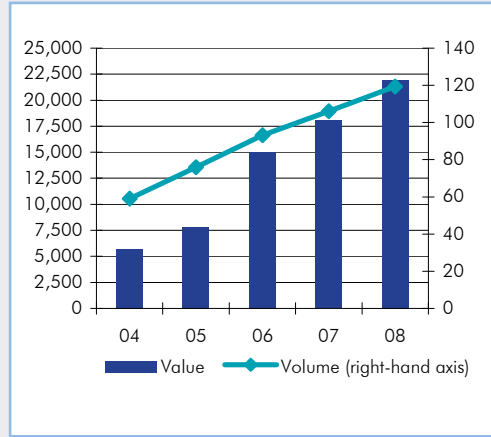
IV.1. Turkish Interbank Clearing Real Time Gross Settlement System (TIC-RTGS) and Elektronic Securities Transfer and Settlement System (TIC-ESTS)

CBRT is the sole owner and operator of the TIC-RTGS that realizes payments among banks in Turkish Lira and TIC-ESTS which works in an integrated manner with the TIC-RTGS and provides the opportunity to realize their transfer and settlement of securities with regard to Delivery versus Payment(DvP) principle for the participants.

Forty-eight banks operate within the TIC-RTGS and TIC-ESTS system.

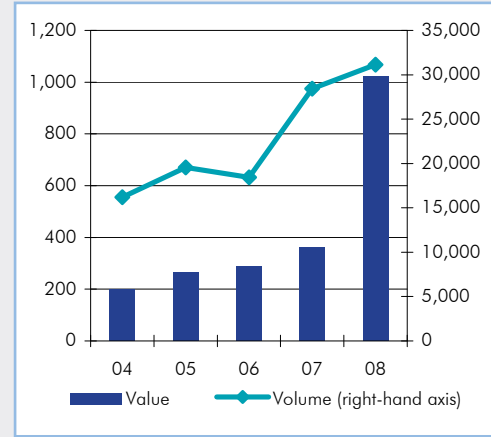
Transaction value of TIC-RTGS rose by 21.5 percent in 2008 compared to the previous year and reached TL 21,919 billion. The number of TIC-RGTS transactions performed in 2008 increased by 12.5 percent compared to the previous year, reaching a total of 119 million (Chart IV.1).

Chart IV.1
Volume and Value of TIC-RTGS Transactions
(Billion TL, Million)



Source: CBRT

Chart IV.2
Volume and Value of DvP¹ Transactions in TIC-ESTS
(Billion TL, Million)



Source: CBRT
(1) DvP: (Delivery versus Payment)

In 2008, the value of DvP transactions through TIC-ESTS increased by 181.1 percent while the number of transactions mounted by 9.6 percent and reached TL 1,020 billion and 31,1 thousand, respectively (Chart IV.2). Increase in the value of transactions realized in TIC-ESTS in year 2008 is due to the repo auctions held by the Central Bank to fund the market in order to meet the liquidity need that emerged mainly in the second half of the year.

Predictability of the distribution of payments within the day contributes to efficiency of liquidity management and decreases the liquidity risk. Concentration of payments exhibits intensity between 08:00-10:00 in the morning and 14:00-17:30 in the afternoon (Table IV.1).

Table IV.1.
Concentration of Payments in TIC-RTGS (%)

	08:00-10:00	10:00-12:00	12:00-14:00	14:00-16:00	16:00-17:30
I.07	29	3	2	22	44
II.07	28	3	2	25	42
III.07	27	3	3	27	40
IV.07	29	4	4	25	38
I.08	28	3	2	24	43
II.08	26	4	3	25	42
III.08	28	4	4	28	36
IV.08	30	5	5	32	28
I.09	32	4	4	35	25

Source: CBRT

Since there are no upper and lower limits for the value of transactions to be performed through TIC-RTGS, the number of TIC-RTGS transactions is higher than that of many European countries. As of 2008, the ratio of transactions in small amounts (below TL 3,000) to the total

number of transactions through TIC-RTGS was 76,5 percent. On the other hand, although the value of transactions to the GDP ratio is lower compared to the European countries, it exhibits an increasing pattern. The value of TIC-RTGS transactions, which was 20 times the GDP in 2006, reached 21.4 times the GDP in 2007 and continued to rise in 2008, reaching 22.7 times the GDP (Table IV.2).

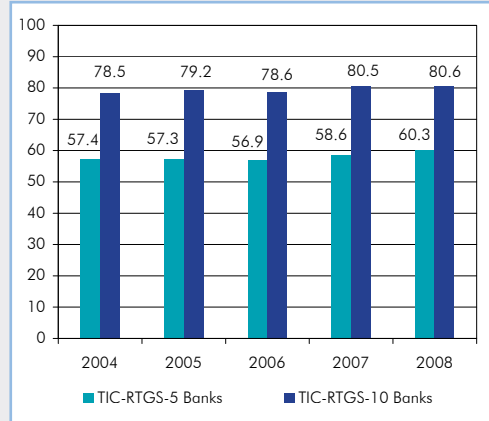
Table IV.2
Real Time Gross Settlement (RTGS) Systems-Country Comparison

Country/ Payment System	2003	2004	2005	2006	2007
Belgium (ELLIPS)					
Transac. Volume (Million)	1.8	1.8	1.8	1.7	2.0
Transac. Value (Billion USD)	15,307	18,233	21,448	24,373	36,453
Transac. Value/GDP	49.4	50.6	57.2	61.1	79.5
France (TBF)					
Transac. Volume (Million)	3.9	4.0	4.3	4.6	4.9
Transac. Value (Billion USD)	108,750	134,697	151,425	169,587	198,527
Transac. Value/GDP	60.4	65.3	70.6	74.8	76.7
Netherlands (TOP)					
Transac. Volume (Million)	4.9	5.0	4.7	4.8	7.3
Transac. Value (Billion USD)	29,669	36,878	38,126	40,146	53,434
Transac. Value/GDP	55.1	60.5	59.8	59.3	68.9
Germany (RTGS-Plus)					
Transac. Volume (Million)	32.8	34.1	35.8	37.9	47.5
Transac. Value (Billion USD)	145,123	157,005	172,023	189,140	317,934
Transac. Value/GDP	59.4	57.2	61.7	64.9	95.9
Switzerland (SIC)					
Transac. Volume (Million)	192.7	209.1	256.4	317.1	356.8
Transac. Value (Billion USD)	33,087	33,814	32,845	35,867	43,570
Transac. Value/GDP	102.1	92.9	88.5	92.0	102.1
TARGET					
Transac. Volume (Million)	66.8	69.0	76.3	83.4	98.9
Transac. Value (Billion USD)	478,474	558,091	613,614	676,602	913,935
CLS					
Transac. Volume (Million)	19.3	32.6	47.9	61.5	90.3
Transac. Value (Billion USD)	220,574	379,506	545,838	714,320	940,621
Turkey (EFT)					
Transac. Volume (Million)	43.0	58.7	76.4	93.1	106.1
Transac. Value (Billion USD)	3,122	3,986	5,806	10,528	13,886
Transac. Value/GDP	10.2	10.2	12.1	20.0	21.4

Source: BIS, CBRT

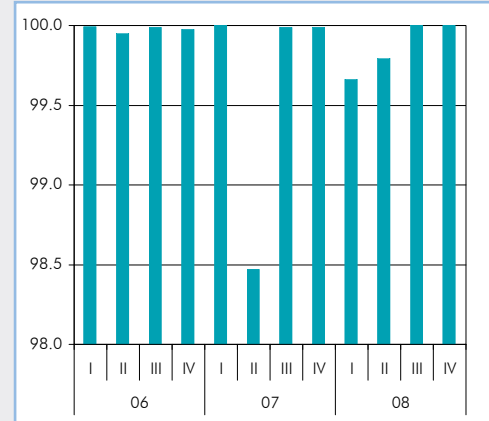
The share of top five and ten banks in terms of the number of transactions through TIC-RTGS, marked an increase in 2008 compared to the previous year and reached 60.3 and 80.6 percent, respectively (Chart IV.3).

Chart IV.3
Concentration Ratio in the TIC-RTGS (%)¹



Source: CBRT
(1) CBRT transactions are excluded.

Chart IV.4
Availability Ratios of TIC-RTGS-ESTS System (%)



Source: CBRT

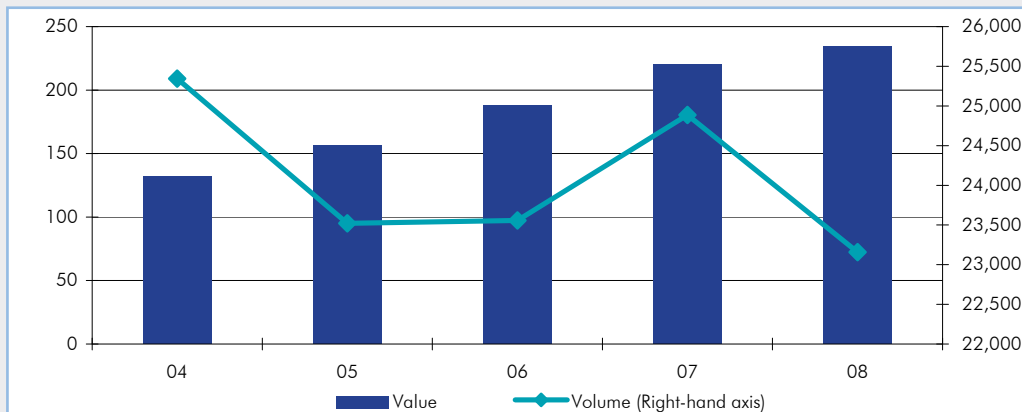
TIC-RTGS system continues to demonstrate high availability. The availability ratio, which indicates the continuity of the payment system and which is the ratio of the time span that the participants can access the system to the total working hours, was 99.86 percent on average in 2008 (Chart IV.4).

IV.2. Cheque Clearing System

The cheque clearing operations, which play an important role in payment systems, are carried out by the Interbank Clearing Houses Center (ICH) under the oversight of the CBRT.

As of year-end 2008, out of 41 banks that participated in the interbank cheque clearing operations, 7 were engaged only in physical presentation of cheques, whereas the remaining 34 were also engaged in non-physical presentation.

Chart IV.5
Volume and Value of Cheques Transacted in ICH (Billion TL, Thousand)



Source: CBRT

The number of cheques, which were subject to the cheque clearing process in ICH, decreased by 5,6 percent compared to 2007, amounting to 23.156 thousand in 2008. In the given period, the value of cheques processed increased by 6,3 percent and reached TL 234,3 billion (Chart IV.5).

In the cheque clearing system, the debit and credit positions of the participants are determined by multilateral netting following the finalization of the provision operations.

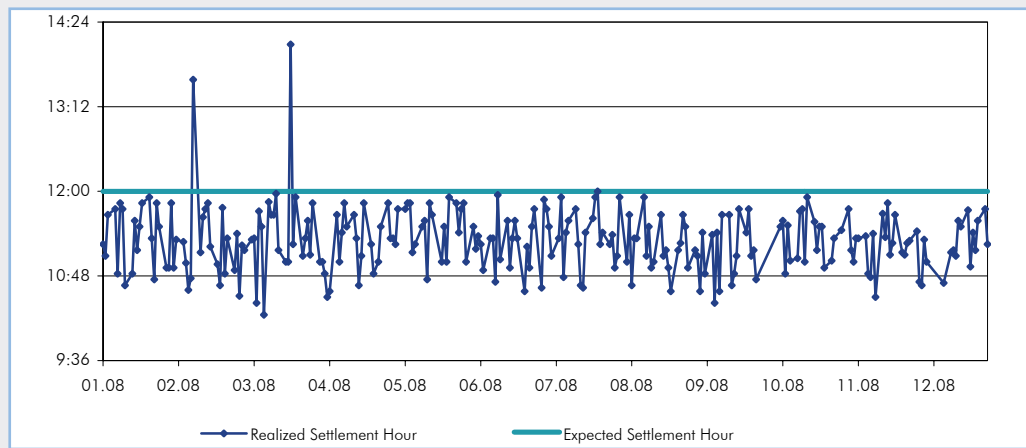
Table IV.3 Cheque Clearing System-Netting Ratio

	2004	2005	2006	2007	2008
Netting Ratio (%)	71.92	71.96	74.79	77.82	79.31
Transaction Value (Billion TL)	131.9	156.2	188.3	220.5	234.3
Liquidity Saving Value (Billion TL)	94.8	112.4	140.8	171.6	185.8

Source: CBRT

Since the cheque clearing system operates according to the multilateral netting method, the liquidity requirement of participants arising from their cheque transactions is decreasing. The netting ratio of transactions realized through the cheque clearing system increased compared to the previous year and reached 79,31 percent in 2008 (Table IV.3).

**Chart IV.6
Settlement Hours of Cheque Clearing System**



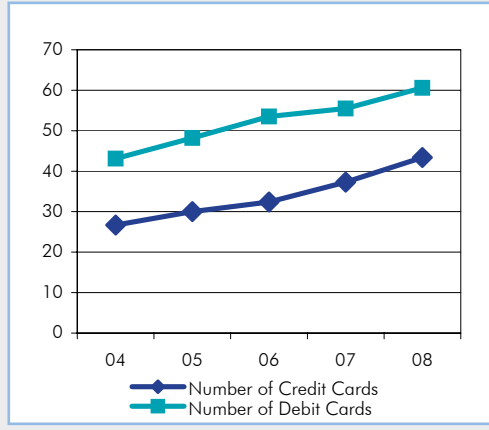
Source: CBRT

In the cheque clearing system, in order to finalize settlement, all banks that become debtor as a result of netting have to fulfill their obligations no later than 12:00 on the following business day. In 2007, settlement in the cheque clearing system was delayed three times, for a total of 34 minutes, as participants performed their obligations later than the due time. On the other hand, in 2008, delays in the cheque clearing system occurred two times, and the total duration of delays amounted to 220 minutes (Chart IV.6). While the average settlement time in the cheque clearing system was 11:22 a.m. in 2007, it was 11:18 a.m. in 2008. Consequently, in 2008 favorable developments were observed in the cheque clearing system regarding both the number of delays and the average time of settlement despite the increase in total duration of delays.

IV.3. System of Card Payments

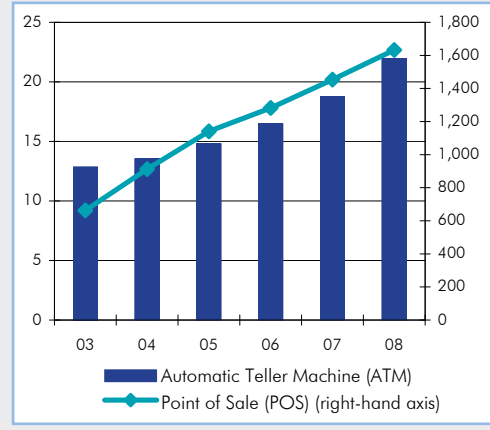
Interbank Card Center (ICC), that has 28 members, was established in 1990 with partnership of 13 banks in order to provide solutions to common problems within the system of card payments and to improve the rules and standards of debit and credit cards in Turkey.

Chart IV.7
Number of Credit Cards and Debit Cards
(Million)



Source: ICC

Chart IV.8
Number of ATM and POS
(Thousand)



Source: ICC

Same as the previous years the number of debit and credit cards in Turkey continued to exhibit an increasing trend in 2008. The number of credit cards, which was 37.3 million by the end of 2007, rose by 16.4 percent and reached 43.4 million by the end of 2008. In the same period the number of debit cards reached 60.6 million, with an increase of 9.2 percent (Chart IV.7).

Due to widespread use of debit and credit cards, the numbers of point of sale (POS) devices and automated teller machines (ATM) have increased. In 2008 the number of POS devices rose by 12.3 percent reaching 1.6 million and the number of ATMs increased by 16.9 percent reaching 22 thousand (Chart IV.8).

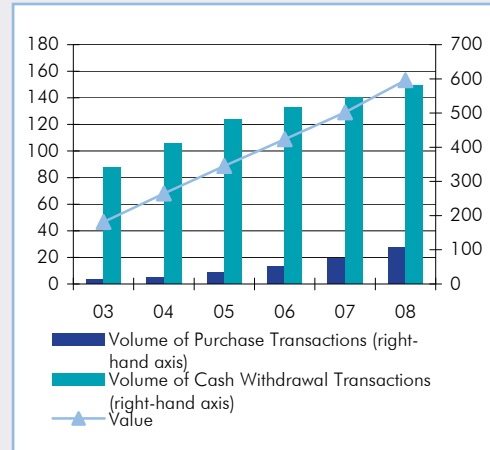
Chart IV.9
Volume and Value of Credit Card Transactions
(Billion TL, Million)¹



Source: ICC

(1) Domestic and international use of domestic credit cards

Chart IV.10
Volume and Value of Debit Card Transactions
(Billion TL, Million)¹



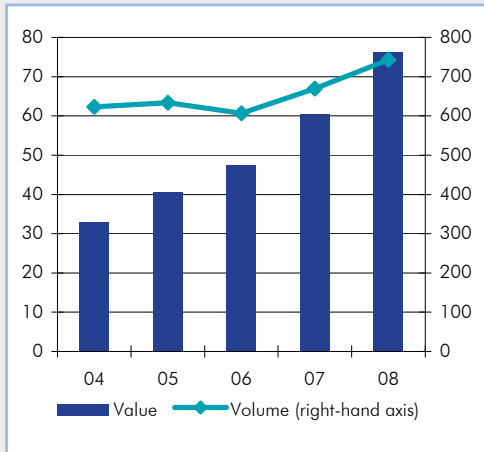
Source: ICC

(1) Domestic and international use of domestic debit cards

The volume of credit card transactions rose by 17.6 percent while the value of credit card transactions increased by as much as 30.8 percent and they reached 1,698 million and TL 184,993 million, respectively. The share of purchasing transactions within total credit card transactions in 2008 was 94.6 percent in volume and 89.7 percent in value (Chart IV.9).

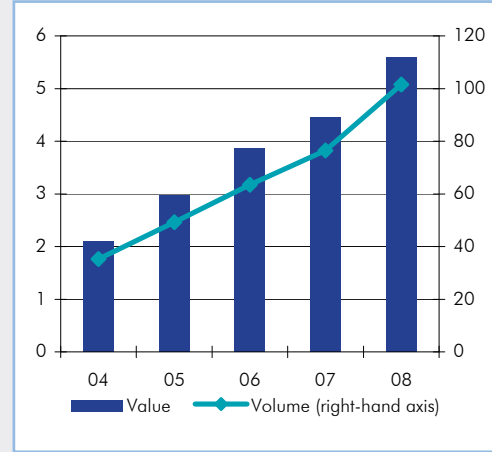
The analysis of debit card transactions reveals that the volume of debit card transactions rose by 11.0 percent reaching 688 million, whereas the value of debit card transactions went up by 18.7 percent reaching TL153.2 billion. It is observed that debit cards are mainly used for cash withdrawal rather than purchasing (Chart IV.10).

Chart IV.11
Volume and Value of Credit Cards Processed in the Card Clearing System (Billion TL, Million)



Source: ICC

Chart IV.12
Volume and Value of Debit Cards Processed in the Card Clearing System (Billion TL, Million)



Source: ICC

The clearing of debit and credit cards, which are two leading non-cash payment instruments, are executed by the Interbank Card Center (ICC). The volume of transactions which were subject to credit card clearing process rose by 10,9 percent compared to the previous year and reached 743,2 million; while the value of transactions increased by 26,1 percent amounting to TL 76,1 billion in 2008 (Chart IV.11).

According to the ICC data, the volume of transactions which were subject to the clearing process of debit cards rose by 32,7 percent compared to the previous year and reached 101,5 million, while the value of transactions increased by 25,8 percent reaching TL 5,6 billion in 2008 (Chart IV.12).

Table IV.4 Card Clearing and Settlement System- Netting Ratio (%)

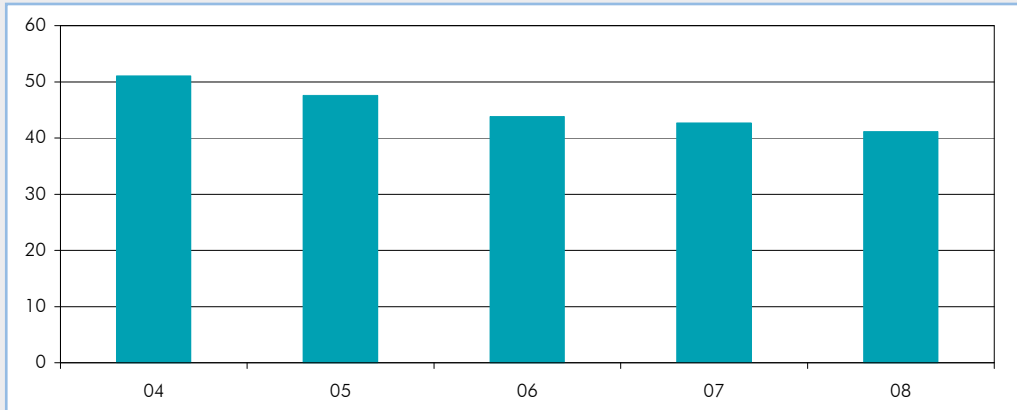
	2004	2005	2006	2007	2008
Clearing and Settl. of Credit Cards					
Netting Ratio (%)	78.6	77.7	81.7	78.3	76.5
Transaction Value (Billion TL)	33	41	48	60	76
Liquidity Saving (Billion TL)	26	32	39	47	58
Clearing and Settl. of Debit Cards					
Netting Ratio (%)	59.4	58.3	60.8	64.0	61.9
Transaction Value (Billion TL)	2.1	3.0	3.9	4.5	5.6
Liquidity Saving (Billion TL)	1.2	1.7	2.4	2.9	3.5

Source: ICC

As is the case with the cheque clearing system, the card clearing system also operates according to the multilateral netting method and therefore reduces the liquidity requirements of

participants arising from card transactions. The netting ratio of credit card transactions realized through the system was 76,5 percent and the liquidity requirement relating to credit card transactions decreased by TL 58 billion in 2008. This same ratio was 61,9 percent for debit card transactions and TL 3,5 billion of liquidity savings was obtained (Table IV.4).

Chart IV.13
Ratio of Value of Credit Card Transactions Subject to Clearing Process to Total Value of Credit Card Transactions (%)



Source: ICC

The ratio of the value of credit card transactions subject to clearing to total transactions for credit cards continues to decrease. The ratio which was 42,7 percent in 2007, decreased to 41,2 percent in 2008. This decline also indicates that as a result of promotions, tendency to use credit cards via POS and ATM devices of the issuer banks has increased. To have POS devices of different banks in the same workplace means additional cost. Banks should cooperate for the common use of POS devices in order to increase efficiency (Chart IV.13).

Box 16. **IBAN (International Bank Account Number)**

IBAN, which is to replace current bank account numbers, is an international bank account number generated according to a nationwide standard length and structure.

The aim of IBAN is to enable that money transfers reach their beneficiaries fast and accurately through defining the customer bank account numbers on the international scale.

Along with EU countries, IBAN is used in many countries. In our country, IBAN is made up of 26 alphanumeric characters. The first two digits, TR, is our country code. The next two is check digits and used for verification of IBAN. The following five digits is the bank code. The reserve field is single digit and 0 is used until further notice. The last 16 digits is the bank account number.

TR	XX	YYYYY	0	<u>ZZZZZZZZZZZZZZZZ</u>
Country Code	Check Digits	Bank Code	Reserve Field	16 Digit Bank Account Number

Communique on The International Bank Account Number No.2008/6 from the CBRT was published in the Official Gazette No. 27020, dated October 10, 2008. According to this Communique;

Banks,

- shall generate and communicate the IBAN for each bank account of the customer which is subject to money transfer
- shall indicate the IBAN format as follows; in electronic form, the IBAN shall contain adjoining characters with no separators or blank spaces between the characters, on written documents, the IBAN shall be shown in groups of 4 characters starting from left and separated by blank spaces.
- shall provide the technical infrastructure for the use of IBAN.
- shall take steps towards the right and widespread use of IBAN.

Customers,

- shall apply to the banks to get their IBANs where they have accounts subject to money transfer.
- shall send the IBAN received as account number to the sender for the money transfers to them.
- shall present the IBAN of the beneficiary to make money transfer. However if the IBAN of the beneficiary cannot be received then transfer shall be made by written consent for each transaction indicating that IBAN of beneficiary will not be notified.

Moreover, with this Communique a gradual transition period is carried out in terms of the use of IBAN. According to this;

Effective from 10.10.2008;

- Banks shall generate and communicate the IBAN for each bank account of the customer which is subject to money transfer.

Effective from 01.01.2009;

- Banks shall present IBAN on all the documents prepared for their customers currently.
- It is mandatory to validate and use beneficiary's IBAN in cross-border money transfers to European Economic Area (EEA).

Effective from 01.01.2010;

- For the domestic and incoming cross border transfers and transfers having account number as IBAN, the validation of IBAN shall be done and for outgoing transfers the IBAN of sender and beneficiary shall be used.
- Customers shall present the IBAN of beneficiary for the domestic money transfers and banks shall validate and use that IBAN.