

TARGET IMBALANCES

The issue at stake

The subject of TARGET imbalances came up in a meeting in July between the author, Edward Farmer of Intrinsica Capital, and a senior UK politician, whose assumption was that each National Central Bank (“NCB”) either deposited with or borrowed from the ECB: the author said he did not think this was true. Jacob asked for a note as to how the accounting actually works and who owes what to whom.

We have further liaised with Andrew Hunt of Hunt Economics.

Summary

The situation is obscure. There seems to be no dispute that there are original balances outstanding between NCBs bilaterally, but the original size of these balances is opaque. A net figure is carried on the ECB balance sheet which was a liability of €150 billion as of 31.12.16, that being derived from over €1 trillion in deposits and €900 billion in overdrafts.

These figures in turn derive from the original figures after a process described on page A25 of the ECB’s accounts as follows: payments “give rise to bilateral balances in the TARGET2 accounts of EU central banks. These bilateral balances are netted out and then assigned to the ECB on a daily basis, leaving each NCB with a single net bilateral position vis-à-vis the ECB only”.

One is left with several questions:

- Are €1 trillion in deposits and €900 billion in overdrafts the actual balances of all the NCBs’ accounts with one another on that date?
- Or are these figures the result of a netting calculation and the actual balances are different and higher?
- What is the legal basis on which the ECB permits itself to alter these very large original balances into a single balance in its own figures – a liability of €150 billion?

There is also a question as to whether these positions exist just for the short 1½ hour period of TARGET2’s end-of-day and start-of-day processes, or whether they also exist latently 24x7 i.e. whether the netting would kick in if one of the NCBs went down during business hours, or whether the netting is a form of end-of-day window dressing.

These questions matter very much indeed for shareholders in the ECB, because the gross amounts are very large considering the ECB’s own resources to support them. Even the net position of €150 billion is the largest single item on the ECB’s balance sheet.

The ECB may be lender/borrower-of-record (i) just over end-of-day; or (ii) not at all. The ECB may be lender/borrower-in-law (i) just over end-of-day; or (ii) 24x7; or (iii) not at all.

“Lender/borrower-of-record” means the loans and deposits actually become loans and deposits of the ECB and not of the NCBs.

“Lender/borrower-in-law” means that the ECB is the risk counterparty for the loans and deposits, even if they remain on the books of the NCBs bilaterally.

There are four versions of what the legal and risk situation could be. The Bank of England’s risk as a shareholder – and therefore the UK’s risk – will vary enormously with the answers to these questions. The versions relate to the ECB’s accounting, its meaning, and the impact for the ECB’s owners:

Correctness of ECB accounting	What that means in substance	Impact for owners
ECB accounting is correct	The ECB owes €150 billion but is not responsible for the matching €908 billion	There are not realistically enough other assets to meet a claim of €150 billion, so the owners could face a call for this amount
ECB accounting is false: the gross amounts should be shown	The ECB owes €1,058 billion to the depositing NCBs, even if none of the borrowing NCBs pay back	A definite and very big call on the owners if one or two borrower NCBs do not repay, the amounts involved being so large compared to the ECB’s own size
ECB accounting is false: the gross amounts that should be shown are larger than the ones it does show	The ECB owes €1,058 billion of deposits and owns €908 billion of overdrafts, but these figures have been derived from the original figures via a netting calculation. The original balances are undisclosed but will be higher – and the ECB owes the entire amount of deposits to the depositing NCBs, even if none of the borrowing NCBs pay back	This is a more extreme version of the previous one. The wording of page A25 in the ECB’s accounts is key: “bilateral balances are netted out and then assigned to the ECB on a daily basis”, implying a two-stage process in which the ECB’s figures are the ones resulting from the application of the first stage
ECB accounting is false: the NCBs’ debts are with one another	The ECB has no liability even on the €150 billion it shows on its balance sheet. NCBs owe the money to one another, based on security that represents a 100% correlation with the borrower	The ECB’s owners can take comfort that there will be no calls on them down the ECB channel, but at the same time TARGET2 will be revealed as a mechanism through which the NCBs of some Member States are making direct loans to the NCBs of other Member States, at a cost to themselves due to negative interest rates, without effective security and in much larger size than the loans available out of any of the financial stabilisation mechanisms (EFSM, EFSF, ESM)

The author’s view is that it will turn out that the ECB is neither lender/borrower-of-record nor lender/borrower-in-law, that the NCBs are exposed to one another 24x7, and that the netting and assignment of the TARGET2 end-of-day positions into a single figure on the ECB’s balance sheet is not justified by the legal agreements in place.

The author’s view is further that the NCBs’ balances with one another are much larger than the netted figures shown in the ECB’s balance sheet.

Recommendations

The Bank of England should be asked to obtain from the ECB the following, so as to resolve these important questions:

1. The Netting and Assignment Agreement the ECB has signed with the NCBs in order to back up its accounting treatment
2. Example but genuine end-of-day balance and transaction statements on:
 - a. All of the 552 accounts that NCBs hold with one another for TARGET2
 - b. The 24 accounts that TARGET2-participating NCBs hold with the ECB

Contents

Page	Subject
1	The issue at stake
1	Summary
3	Recommendations
3	Contents
4	List of source documents
4	Note on “Extracts from source documents”
5	Background
6	Accounting treatment
7	Architecture of TARGET before the TARGET2 Single Shared Platform (“SSP”)
8	Build-up of imbalances in TARGET
8	Move to TARGET2 – Single Shared Platform (“SSP”)
9	Who has RTGS accounts in TARGET2 and how is credit created?
9	TARGET2 and TARGET Securities 2
10	Phases in the TARGET day
11	What happens during the start-of-day processes
11	Nature of the End-of-Day and Start-of-Day processes from a Cash Management perspective
11	Credit extended by NCBs to the CIs for which they are responsible
12	Purpose to which credit is put by CIs
12	What do the papers say about the lending relationships amongst NCBs in TARGET2?
13	End-of-day accounting at the ECB – is it the result of zero-balancing?
14	Operation of a zero-balancing between the ECB and the NCBs
15	Conclusion on zero-balancing
15	What is alternative construction?
16	What an Assignment and Netting Agreement should contain
17	ECB’s accounting and On-Balance Sheet Netting
18	Validity of ECB’s rights in time
18	Whether the ECB’s papers permit On-Balance Sheet Netting
18	ECB’s ability to repay the loans
19	Conclusion on the ECB’s accounting
20	Impact on the UK and recommended actions
21-37	Extracts from source documents

List of source documents

A number of documents were reviewed:

- Guideline for TARGET2 2005
- Amending Guideline for TARGET2 2016
- Harmonised conditions for participation in TARGET2 (Banque de France version only)
- TARGET2 Information Guide v4.0 from 2010 for the Single Shared Platform
- Target functional specification V2_1_070122 for the Single Shared Platform
- Target 2016 annual report
- ECB 2016 annual report
- ECB 2016 annual accounts (contained in the ECB annual report)
- Eurosystem balance sheet 2016 (also contained in the ECB annual report)
- ECB TARGET Balances statistics as of end of June 2017
- CCBM information for counterparties - summary of legal instruments of January 2017
- CCBM procedures for Eurosystem counterparties January 2017

In addition there are the recent documents from the Bank of England announcing that their plan to allow non-banks to have Settlement Accounts in the UK RTGS system, and those papers make it very clear that the counterparty of each holder of a Settlement Account is the Bank and not one another.

The Bank acts as Settlement Agent:

- BOE settlement accounts 19jul17
- BOE access for nonbank payment service providers 19jul17

The documents to hand on the original TARGET, from 1998-9, show that the ECB was not the Settlement Agent for TARGET in the same way the Bank of England is for the UK RTGS. The ECB was not a party to settling payments between different NCBs. The NCBs could lend to one another, using the CCBM to manage the collateral they offered to one another.

TARGET2 remains a "decentralised system" but there is nothing in the functional specification in the way of an explicit description of how, as a result of the day-to-day payment operations in TARGET2 and any end-of-day liquidity operations, NCBs end up running overnight balances with one another, or they run balances with ECB, or with the TARGET system. TARGET is not a legal person that has no assets and liabilities itself.

Extracts from Source Documents

The final 16 pages of this paper consist of extracts – in most cases verbatim – from the following source documents, where the contents of the extract are pertinent to the subject in hand:

- ECB 2016 annual accounts (contained in the ECB annual report)
- Target functional specification V2_1_070122 for the Single Shared Platform
- Target 2016 annual report

The following documents are quoted directly where relevant:

- the Guideline of the ECB of 30 December 2005 “on a Trans-European Automated Real-time Gross settlement Express Transfer system (TARGET)” - ECB/2005/16 and 2006/21/EC
- ECB TARGET Balances statistics as of end of June 2017
- TARGET2 Information Guide v4.0 from 2010

Background

TARGET imbalances have been pointed to as an example of an under-the-table Eurozone Bailout Fund whereby the central banks of a small number of Eurozone countries (Germany, Netherlands, Luxembourg) make large loans to the central banks of the other Eurozone countries, albeit secured ones: secured on bonds issued by the Member State government as whose agent the borrower central bank is acting, and therefore representing the same credit risk as the central bank itself.

The Bank for International Settlements has issued research to suggest that the imbalances are a technical result of payment flows resulting from how the ECB's Asset Purchase Programme is working and are therefore not a cause for concern.

Andrew Hunt is of the opinion that they are an example of "unsterilised foreign exchange intervention", of the type where creditor actions relieve the debtor of actions necessary to rebalance their economy. Adjustment mechanisms that the debtor nation would otherwise have to adopt are shortcircuited by their access to such large amounts of finance from creditors. The availability of that finance to the debtor nation's central bank prevents deflation in the debtor nation.

The amounts involved are substantial. The ECB's 2016 Annual Report shows these amounts:

	2016 €	2015 €
Due to euro area NCBs in respect of TARGET2	1,058,484,156,256	812,734,808,529
Due from euro area NCBs in respect of TARGET2	(908,249,140,203)	(730,463,422,714)
Matched TARGET2 imbalance	(908,249,140,203)	(730,463,422,714)
Net deposit as a result of TARGET imbalance	150,235,016,053	82,271,385,815

The equivalent figures for 30/6/17 were made available in the ECB TARGET Balances statistics:

Borrower NCBs	€ billions	Depositor NCBs	€ billions
Belgium	13.4	Germany	860.8
Greece	76.0	Estonia	0.1
Spain	371.1	Ireland	8.2
Italy	413.9	France	5.1
Latvia	5.7	Cyprus	5.9
Lithuania	2.1	Luxembourg	191.1
Austria	43.1	Malta	3.3
Portugal	76.3	Netherlands	78.9
Slovenia	0.5	Finland	56.1
Slovakia	8.5	Non-Eurozone	2.7
	1,010.6		1,212.2
Matching Balance	1,010.6		
Imbalance shown as "ECB"	201.6		

However, it should be stressed again that these are not necessarily the original balances, since they have been arrived at via an ECB accounting process.

Accounting treatment

The anchor point used in this paper to address the critical issue of accounting treatment is the European Central Bank’s 2016 Annual Report. The ECB reports the net TARGET2 imbalance as if it were its own liability, but does not show the amount by which TARGET2 long balances match TARGET2 short balances as if they were the ECB’s liability (the “Matching balance” above).

These accounting anomalies go to the heart of who owes what to whom. Andrew Hunt’s contacts at National Central Banks behave and speak as if these amounts were owed bilaterally, were not subject to any netting, and are not owed to them by the ECB, either gross or net.

Andrew Hunt has also drawn attention to an anomaly between (i) the aggregated assets of all the members of the Eurosystem at €6.98 trillion; and (ii) the consolidated assets of the Eurosystem as published by the ECB of €4.2 trillion (data supplied by CEIC, a subsidiary of Euromoney Group, based on May statistics). In other words €2.78 trillion of assets disappear during the accounting consolidation of the Eurosystem members, inferring assets/liabilities between Eurosystem members in this higher amount and not just the €1 – 1.2 trillion that the ECB shows as the gross TARGET2 imbalance in its 2016 accounts/30.6.17 statistics.

Indeed, the ECB’s reports on TARGET2 are akin to a “League Table” of each NCB’s ranking in terms of borrowing or lending into TARGET2, rather than a statement of who owes what to whom.

Twenty four NCBs participate in TARGET2: that is all the nineteen Eurozone NCBs plus the NCBs of Bulgaria, Croatia, Denmark, Poland and Romania. Each of the twenty four participants maintains an account with the other twenty three (“Away Accounts” for this paper’s purposes), and runs an account in its books for the other twenty three NCBs (“Home Accounts”). No NCB runs accounts with itself.

In calculating the number of bank accounts that NCBs hold with one another for TARGET2, it is exactly the same as the number of fixtures in a season played by 24 clubs in a football league: each plays the other 23 clubs Home and Away, making 46 fixtures per club, and one full round of fixtures is 12. The total number of fixtures in the season is thus $46 \times 12 = 552$. The Fixture List would be issued in the same format as a table showing the NCBs as the clubs:

Away Accounts >>	Bundesbank	Nationale Bank van Belgie	Nederlandsche Bank	Banca d’Italia	Banque de France	Banco d’Espana	NCB <i>n</i>
Home Accounts							
Bundesbank							
Nationale Bank van Belgie							
Nederlandsche Bank							
Banca d’Italia							
Banque de France							
Banco d’Espana							
NCB <i>n</i>							

There are 552 original bank accounts held by NCBs with one another for the purposes of TARGET2, and each one has an end-of-day balance on it.

To get the original picture of TARGET2 imbalances, one would need to populate each cell in the full version of the table above – that is 552 cells. The ECB should issue this “Fixture List” version of the balances on NCBs’ accounts with one another, and not just the “League Table”.

Architecture of TARGET before the TARGET2 Single Shared Platform (“SSP”)

The original TARGET consisted of two components:

- The RTGS systems run by each NCB
- The Interlinking between the different NCBs

Each Credit Institution (“CI”) held an account with its home NCB:

- Payments to other CIs in the same country were cleared and settled in the RTGS system at the home NCB
- Payments to CIs in different countries were debited to the sending CI in its home NCB’s RTGS system, and then the home NCB relayed the payment to the NCB where the destination bank had its RTGS account, by the home NCB sending a SWIFT payment message via the Interlinking component (SWIFT MT202 message for a payment to a bank beneficiary; SWIFT MT103 message for a payment to a non-bank beneficiary)
- The sending CI’s payments would be made by its home NCB as long as the CI had sufficient credit balance on its RTGS account or had generated liquidity with its NCB from its securities portfolio
- The generation of liquidity could be enacted via various legal methods – pledge, repo – as laid out in the Correspondent Central Banking Model (“CCBM”)
- The actual securities which could be used were listed by each NCB:
 - A List – one issued by ECB - securities against which cash could be generated at any NCB (e.g. Member State government or government agency bonds, EIB bonds)
 - B List – one issued per NCB - securities against which cash could be generated only at the NCB that issued the list (e.g. at Banque de France, unused Paris metro tickets or postage stamps)

Every NCB held a Euro account at every other NCB, and the critical point was in the processing of cross-border TARGET payments sent through the Interlinking.

For example, if the Central Bank of Ireland wished the Bundesbank to credit a payment ordered by AIB for final credit to a commercial customer of Commerzbank:

- the Central Bank of Ireland credited the Bundesbank’s account in its own books and stated in the MT103 sent over the Interlinking “we have credited your account with us”
- The Bundesbank, however, when debiting the payment, took the money from the Central Bank of Ireland’s account in its books

The rationale behind this was that, from the Bundesbank’s angle, relying on money put into their account at the Central Bank of Ireland represented an **unsecured** credit risk on Ireland.

Debiting the Central Bank of Ireland’s account in their own books did not, because either:

- the Central Bank of Ireland’s account was in credit; or
- the Central Bank of Ireland’s account could go into overdraft, an overdraft that had to be secured with “central bank money” (since all central bank dealings must be secured) through the CCBM.

The NCBs allowed overdrafts on their accounts with one another, as long as A List securities were pledged in accordance with the CCBM, because the NCBs could all agree that A List securities represented “central bank money”.

The Central Bank of Ireland would then pledge Irish government securities to the Bundesbank in order to secure its overdraft. In effect the Bundesbank would have Irish government risk, whether they relied on their own credit balance at the Central Bank of Ireland or on the security behind the Central Bank of Ireland’s overdraft in their own books. However, one is an unsecured risk, whilst the other is secured, even if the security represents the same credit risk as the borrower.

Build up of imbalances in TARGET

In this way, and proliferated over the many bilateral relationships established in the TARGET decentralised model, the NCBs ended up running large credit balances with one another, and overdrafts with one another secured on the A List securities of the country of the borrowing NCB.

Certain NCBs – from solvent countries – ended up as lenders:

- with credit balances on their accounts with other NCBs;
- granting overdrafts on accounts in their own books for the same NCBs.

All the rest were borrowers:

- borrowing at other NCBs;
- owing money deposited with them on other NCBs’ current accounts.

The predominant method of securing the overdrafts was a pledge or a variant on it, but not a repo: the borrowing NCB did not sell its securities to the lending NCB to generate cash on its current account and agree to buy the securities back later.

These overdrafts did not have to be brought to zero at the end of each business day i.e. the borrower NCBs did not have to repo their securities for cash at end-of-day today, bring their current account to zero, and then go back into overdraft via the reversal of the repo as the first transaction of the following day.

The overdrafts on the current account could be maintained both intraday and overnight as long as sufficient security had been pledged.

Move to TARGET2 – Single Shared Platform (“SSP”)

In 2006 the TARGET2 SSP was implemented, allowing CIs to have their RTGS account directly in TARGET2.

However, despite the existence of the SSP and the very large number of institutions with RTGS accounts directly on it in the Payments Module, the legal construct did not change.

The construct was confirmed in the Guideline of the ECB of 30 December 2005 “on a Trans-European Automated Real-time Gross settlement Express Transfer system (TARGET)” - ECB/2005/16 and 2006/21/EC.

It continues to describe TARGET in terms of parallel national RTGS systems, for which it sets minimum standards (Article 3). Then there would be an interlinking component for making cross-border payments, (Article 4), and it continues to dictate that all NCBs should have accounts with one another (Article 4.b.1). It describes the processing of a cross-border payment in exactly the way described above in the original TARGET (Article 4b – 4d).

Article 3.f describes how intraday credit is to be supplied, and how that can translate into overnight credit: in essence each NCB is the sole source of credit to the credit institutions (“CIs”) that it sponsors onto TARGET2, whether the CI holds an RTGS account directly on the SSP, or holds it at the NCB.

Who has RTGS accounts in TARGET2 and how is credit created?

The NCBs and the ECB have RTGS accounts in the SSP, as do CIs and so-called Ancillary Systems – such as EBA EURO1, other retail payment systems, and securities systems.

RTGS accounts are set up within the TARGET2 Payments Module or “PM”.

CIs will also have accounts with their home NCB, that is responsible for them in TARGET2:

- A proprietary home account, or “PHA”, outside TARGET2, set up in whatever systems the respective NCB has implemented to take overnight deposits from its CIs or to create intraday and overnight credit for them – which the CIs then transfer onto their RTGS accounts in TARGET2 in order to use the money;
- An account in the “Home Accounts Module” or “HAM” of TARGET2, which does inside TARGET2 precisely what PHA does outside. A HAM account is an account of the CI with its home NCB. If an NCB creates credit for one of its CIs in its HAM account, the CI will move that to its RTGS account in order to use it.

CIs can also deposit money or obtain credit via “Standing Facilities”, or “SF”, from their home NCB:

- overnight deposit accounts;
- marginal lending accounts for (i) marginal lending "on request" (in general needed for the fulfilment of minimum reserves) and (ii) automatic marginal lending (for automatic transformation of intraday credit in overnight credit at the end of the day).

The point is that CIs’ RTGS accounts in the PM have a zero balance overnight; whatever balance there was at the close of normal business in the PM is moved to a PHA, to a HAM and/or to an SF overnight.

TARGET2 and TARGET Securities 2

TARGET2 is closely linked to TS2 – TARGET Securities 2. Participants in TS2 have cash accounts in TS2, but these fund and defund to the RTGS accounts of the same institutions in TARGET2, and apparently during the TARGET2 nighttime windows. Now that so many securities depositories have moved onto TS2, the liquidity requirements on TARGET2 to support all that activity have become significant (see TARGET 2016 Annual Report).

Phases in the TARGET day

While TARGET2 supposedly is open on D for normal business from 07:00 until 18:00, in fact the start-of-day procedures for D begin at 18:45 the previous evening on D-1, with a window for initial Liquidity Provision from 19:00 to 19:30 on D-1.

There are then the two Nighttime Settlement Procedures, open between 19:30 on D-1 and 07:00 on D, at which point the normal day's business begins. The normal day finishes at 18:00, and there are then the End-of-Day Processes from 18:00 until 18:45.

The Nighttime Settlement Procedures, starting at 19:30, are windows for the settlement of balances in Ancillary Systems, and primarily securities settlement systems. The trading of the respective securities will be on a D+1 or D+n basis, so that the securities and related cash are settling at the start of business on D, in fact prior to normal bank opening hours.

The TARGET Information Guide states the End-of-Day Processes as being (page 61 – 62):

“Between 18:00 and 18:15, the following events will take place:

- transfer back of liquidity from sub-accounts to main accounts (emergency procedure);
- rejection of pending payments at 18:00 (immediately after the running of algorithm 3);
- automatic emergency procedure if a group of accounts manager was not able to balance the accounts in time and there is one uncovered overdraft on one account belonging to a group of accounts
- automatic transfer of liquidity to the PHA (optional);
- use of the standing facilities until 18:15 (18:30 on the last day of the minimum reserve period);
- transfer of liquidity to the SF accounts, booking of overnight credit to SF accounts, automatic transfer of overnight credit from the SF to the RTGS account in case of use of intraday credit at the end of the day (optional);
- automatic transfer of liquidity to the HAM account (optional);
- levelling out of group of accounts (emergency procedure);
- sending of balance information to the RM module; and
- sending of account statements MT940/950 (optional).

After 18:30 the internal central bank accounting takes place.”

Internal central bank accounting lasts until 18:45, TARGET2's final closure point.

The operations that are part of the End-of-Day Processes are described in the TARGET Functional Specification. As stated earlier they are aimed at ensuring that any intraday balance held on an RTGS account in the PM is moved for end-of-day purposes into the account where the CI involved has agreed to deposit it, or where the CI has an overnight credit facility, - at their home NCB.

The modules of TARGET that enable this (“HAM” and “SF”) are described in the Functional Specification. If an NCB does not use the TARGET modules for these operations, they have to build equivalent systems themselves if they want their CIs – the ones they are responsible for – to enjoy the facilities contemplated (these are the “PHA”).

What happens during the start-of-day processes

The window at start-of-day for Liquidity Provision basically reverses the operations undertaken at end-of-day (page 56-57 of the TARGET Information Guide):

“Between 19:00 and 19:30 liquidity is provided for the day-time settlement and night-time settlement if applicable. The following liquidity movements can take place:

- from the SF to the PM;
- from the SF to the HAM;
- from the HAM to the PM; or
- from the PHA to the PM (optional).

These 30 minutes could also be used to update credit lines or to settle repos before opening.”

“PM” in these examples means the CI’s RTGS account in the TARGET2 Payments Module.

Nature of the End-of-Day and Start-of-Day processes from a Cash Management perspective

The end-of-day operations put through between 18:00 and 18:15 are reversed between 19:00 and 19:30 as the first transactions of the following day. This would be known in the Cash Management world as a Cinderella Zero-Balancing System.

The initial set of transactions is a classic zero-balancing: a set of fully automated and computer-programmed operations to reduce/increase the balances on slave accounts to zero and to credit that reduction or debit that increase in full to a master account as the final transaction on D.

The “Cinderella” function is the reversal of all the zero-balancing transactions in full as the opening actions of D+1. Any lending or borrowing relationships that existed as at the end of day-to-day operations are reconfigured for the purposes of end-of-day accounting, and then reverse-configured back to what they were originally as the opening action of the next-following business day.

The slave accounts in this case are the RTGS accounts in the Payment Module; the master accounts are the accounts of the same CI at its home NCB, whether it is a Proprietary Home Account outside TARGET2, or a Home Account or a Standing Facility within TARGET2.

The point is that all credit limits and other facilitators needed to allow the zero-balancing to be run must be pre-programmed and not subject to any human intervention or decision-making, if only 15 minutes are available to carry them out at end-of-day and there are 1,500+ CIs with RTGS accounts.

These have to be STP operations (Straight-Through Processed) in order to get so many of them completed in the short time window.

Credit extended by NCBs to the CIs for which they are responsible

It is easy to see where NCBs are extending credit to their CIs for the purposes of TARGET2, to enable those CIs to settle their payments:

- for CIs that **do not** have their own RTGS account directly in TARGET2, the home NCB can fund them on a Proprietary Home Account; the CI still needs a correspondent bank in TARGET2 to execute the payments, and the CI moves the liquidity generated at their home NCB into their account with that correspondent;
- also on Proprietary Home Accounts for CIs that **do** have an RTGS account - but where the NCB involved is not using the HAM or SF module of TARGET2;

- on the HAM module of TARGET2, and/or within the SF module of TARGET2, where the CI has its own RTGS account and its home NCB is using the respective TARGET2 module.

In all such cases the home NCB will take collateral in accordance with the rules of the CCBM, and make an advance onto a PHA account in their books, or directly on a HAM or SF account, depending on whether the respective NCB has decided to use TARGET2 modules or not.

The collateral must be on the single ECB list of eligible collateral – which has 30,000 bond issues on it – and the loan amount must not exceed the face value of the bonds less the haircut designated in the ECB list for the bonds.

Purpose to which credit is put by CIs

The purposes remain the same as in the original TARGET:

1. to fund their outgoing payments in the home RTGS system, albeit that it works on the SSP;
2. to make payment to their home NCB for cross-border payments that will be sent out via the interlinking (albeit that these operations are now done on the SSP).

The contents of the TARGET2 functional specification concentrate on how NCBs provide credit to their CIs, and not how they fund one another.

What one can say with reasonable certainty is that the time available is short for the end-of-day and start-of-day processes for making both intraday credit and cash balances disappear from RTGS accounts of CIs as the last action of D, and restoring them as the first action of D+1, with NCBs taking those positions onto their books either onto PHAs or accounts in the HAM or SF modules of TARGET2. Little time is left for physical operations in which NCBs fund one another or the ECB.

What do the papers say about the lending relationships amongst NCBs in TARGET2?

The Guideline of the ECB of 30 December 2005 “on a Trans-European Automated Real-time Gross settlement Express Transfer system (TARGET)” does not address the NCBs going overdrawn with one another.

The principal and explicit mention is in the ECB’s accounts, on page A25-26 against “Intra-ESCB balances/intra-Eurosystem balances” and in Note 11.2 on page A29 to this same item. It is stated that “these transactions are for the most part initiated by private entities (i.e. credit institutions, corporations and individuals). They are settled in TARGET2 – the Trans-European Automated Real-time Gross settlement Express Transfer system – and give rise to bilateral balances in the TARGET2 accounts of EU central banks”.

This is exactly the situation that arose from the start of TARGET in 1999. However, it was only from 2008 onwards that the balances were remarked upon as being very large, and as not being eliminated as part of normal end-of-day final settlement.

It is clear from the ECB’s wording that NCBs maintain accounts with one another, and that NCBs both hold long balances and go overdrawn on their accounts with one another. In other words there are as many lender/borrower relationships as there are accounts held.

The ECB does not mention what the credit limits are, if any. The ECB annual report states that the lender is another NCB initially, but then “these bilateral balances are netted out and then assigned to the ECB on a daily basis, leaving each NCB with a single net bilateral position vis-à-vis the ECB only. This position in the books of the ECB represents the net claim or liability of each NCB against the rest of the ESCB”.

There are several problems with this wording. Firstly there is the question of whether the figures that the ECB shows are the original balances of the NCBs’ accounts with one another, or are the figures after an initial round of netting: the wording “netted out and then assigned” infers a two-stage process and that the ECB’s figures show the interim and final results, but not the original balances. To re-use the analogy from above, does the ECB show the “League Table” or the “Fixture List”?

Secondly there is the statement that the “position in the books of the ECB” represents a “net claim of liability of each NCB against the rest of the ESCB”, but not a claim or liability against the ECB: why does it appear in the ECB’s books, then?

“ESCB” stands for the European System of Central Banks and is composed of the European Central Bank (ECB) and the national central banks (NCBs) of all 28 EU Member States. ESCB and Eurosystem are synonyms.

End-of-day accounting at the ECB – is it the result of zero-balancing?

The base situation giving rise to the ECB’s accounting treatment is that NCBs have either credit balances or overdraft balances on their accounts with one another at the end of the normal TARGET2 day (18:00).

It is conceivable that the “netting and assignment” is enacted via a similar Cinderella Zero-Balancing System as used for the CIs’ RTGS accounts. If this were occurring regarding NCBs’ accounts with one another, it would be logical to assume that this happens in the phase of the TARGET end-of-day after 18:30 and before 18:45 when “the internal central bank accounting takes place”, rather than as part of the general end-of day process between 18:00 and 18:15.

If the ECB’s accounting is taken to mean that the ECB itself becomes the owner of those positions as at the day’s final closing at 18:45, this implies firstly that the balances in the ECB’s accounts and statistics are indeed the original balances on the NCBs’ accounts with one another: in other words that the meaning of the ECB’s statement that “bilateral balances are netted out and then assigned to the ECB on a daily basis” is that the balances are first fully cleared off into the ECB.

If zero-balancing is taking place, the long and short positions of the NCBs with one another will be cleared off via a Zero-Balancing System, in which the ECB holds the master account. If the CIs are having their RTGS accounts zero-balanced between 18:00 and 18:15 (see above) with a reversal (via “Cinderella” operation) between 19:00 and 19:30, we can infer that the same could be happening between the ECB and NCBs between 18:30 and 18:45 (via a zero-balancing) – but then the reversal (“Cinderella”) should be happening before the “Cinderella” operation for CIs.

For this purpose there would have to be a phase at 19:00 for “internal central bank accounting” to put through the reversal of the NCB/ECB zero-balancing, before the reversal of the transactions between NCBs and their CIs took place. There is no mention of there being such a phase, and the

start-of-day processes last just 30 minutes whereas the end-of-day processes last 45 minutes. The lack of time and the lack of mention point to a process different from zero-balancing.

In addition, a “zero-balancing” between accounts held by NCBs with one another would not be fully computer-programmable, because the accounts involved would not all be on the same computer, because the TARGET2 SSP does not offer a module for NCBs’ accounts for one another. Payment messages would have to be sent by all the NCBs holding slave accounts to the ECB, for the ECB to then process the zero-balancing operations into its books.

The time available would be very short for these types of operations, especially the ones that draw money in from the ECB to pay off an overdraft at an NCB. It could not be guaranteed that the operations were STP’able, leading to an unacceptable operational risk.

Operation of a zero-balancing between the ECB and the NCBs

Such a Zero-Balancing between NCBs and the ECB would need to be conducted as below, if it were being done like a commercial bank would do it:

1. NCBs finalise the end-of-day account balances of other NCBs in their books;
2. Regarding those in credit, they pass an equal-and-opposite debit to the account and send an MT202 to TARGET2 to pay the money out of their own RTGS account to the ECB’s RTGS account;
3. One payment is made per NCB account that was in credit: there is no bundling;
4. The ECB credits the payment to the account in its books of the NCB that had the credit balance, not the one that sent the message;
5. Regarding those debit, the source NCB passes an equal-and-opposite credit to the account and sends an MT204 Direct Debit message through TARGET2 to the ECB to cause a debit to the ECB’s RTGS account and a credit to its own;
6. Again, one MT204 claim is made per NCB account that was in debit: there is no bundling;
7. The ECB debits the payment to the account in its books of the NCB that had the debit balance, not the one that sent the message;
8. In this way all the credit balances held by NCBs originally with one another become credit balances held at the ECB, and so do all the debit balances;
9. All the accounts held by NCBs with one another go to zero; each NCB has one single balance at the ECB, comprised of:
 - a. All credit balances it held with other NCBs; less
 - b. All debit balances it held with other NCBs;
 - c. Resulting in one account balance per NCB on each NCB’s account with the ECB;
 - d. Credit balances would appear as a Liability of the ECB;
 - e. Debit balances would appear as an Asset of the ECB;
10. Every single entry is then reversed under a “Cinderella” arrangement whereby:
 - a. The ECB sends an MT202 payment out to each NCB, equal to every MT202 payment the same NCB sent in to the ECB at the end of the previous day;
 - b. The ECB sends an MT204 to each NCB, equal to every MT204 that the same NCB sent to the ECB at the end of the previous day;
 - c. This re-instates all the NCBs’ balances with one another as they were at the end of normal TARGET2 business on the previous day.

The accounting of the matter at the ECB does not reflect that this is how it is being done. If it were being done like this, the ECB should have Asset positions for each NCB whose account in its books ended up in debit, and Liability positions for each NCB that ended up in credit.

There would be no netting in the ECB's balance sheet. The result for each NCB individually would be "the net claim or liability of each NCB **against the ECB**" and not, as per the statement in the ECB's accounts, "the net claim or liability of each NCB **against the rest of the ESCB**".

Conclusion on zero-balancing

It seems highly unlikely that the ECB is physically taking over all the end-of-day positions of NCBs towards one another, and becoming both the lender/borrower-of-record and the lender/borrower-in-law.

In the Cash Management world, zero-balancing is an alternative technique to netting, not a synonym for it. The ECB's statement that "bilateral balances are netted out and then assigned to the ECB on a daily basis" would thus infer that it is the netting technique that is being used, and not zero-balancing.

The acid test is what the account statements show as the end-of-day balances on the accounts held by the NCBs with one another:

- Are they all at zero? Or
- Do they maintain the balance as at normal close-of-business?

Similarly what do the account statements say on the accounts of each NCB with the ECB:

- Do they show a balance after all the Zero-Balancing entries? Or
- Do the TARGET2 balances not appear at all?

There is nothing in the TARGET2 functional specification and information guide to say that a Zero-Balancing is being done, and the time window for the internal central bank accounting is only 15 minutes at end-of-day, and no such window is mentioned at start-of-day.

However, if the matter is being done via Zero-Balancing, there should be a Zero-Balancing Agreement signed amongst the NCBs and the ECB, laying out what accounts participate in it and how it will run operationally.

End-of-day statements will be produced on all participating accounts, after the Zero-Balancing has been executed.

The Zero-Balancing Agreement and sample statements should be made available, if this is the technique being used.

What is alternative construction?

The alternative construction is that the ECB is becoming lender/borrower-in-law but not lender/borrower-of-record. In this case the balances remain intact at the NCBs, there is no Zero-Balancing, but the ECB has acquired the right to present the balances as "netted out and then assigned to the ECB on a daily basis, leaving each NCB with a single net bilateral position vis-à-vis the ECB only".

The ECB then nets these positions in its own accounts notionally, and this has no effect on the physical end-of-day balances held by NCBs with one another.

This infers that the original balances held by NCBs with one another stay as they are and in full. Once again we need to note the fact that the ECB's statement that "bilateral balances are netted out and then assigned to the ECB on a daily basis" may mean that the original balances are even bigger than the ones used by the ECB as the basis to show its own net liability into TARGET2.

To achieve the treatment that the ECB shows, there firstly needs to be an Assignment Agreement, to make the ECB a legal party to the matter when in the first instance the NCBs are dealing only with one another. The author's view is that the Assignment should come first, because without it the ECB is not a party to the underlying business.

Normally an Assignment of assets and liabilities involves the new party becoming the borrower/lender-of-record and funding the asset/taking over the liability. That would involve movement of funds i.e. in this case Zero-Balancing. There appears to be no movement of funds so this Assignment would be an unfunded one.

A key question is then whether the Assignment/Netting is for overnight purposes only, or is valid 24x7 i.e. if one NCB went bankrupt at 15:00, would the ECB have the right to enact the assignment and netting at that time or not?

What an Assignment and Netting Agreement should contain

The Assignment Agreement would have to firstly involve the NCBs agreeing that the ECB take over responsibility for their mutual balances, without actually taking them over physically, and then that the mutual balances be netted: for the ECB annual report wording to be true – i.e. that the position in the books of the ECB "represents the net claim or liability of each NCB against the rest of the ESCB" – the NCBs would have to agree to two phases of netting:

1. That, in their bilateral dealings, the balances of the accounts of NCB A with NCB B and of NCB B with NCB A be totalled into one figure between NCB A and NCB B; and
2. That the bilateral netted balances of all NCB A's relationships with NCB B to NCB *n* be totalled into one figure (*n* being the total number of NCBs in TARGET2 less one).

The result would be a series of credit balances and a series of debit balances, and the difference between the two would be the net claim or liability of all NCBs towards other Eurosystem members in TARGET2 i.e. the exact definition behind the number on the ECB's balance sheet.

But that does not make the ECB the debtor or creditor of the net figure. In fact the ECB's accounting is neither fish nor fowl: it neither confirms nor excludes its responsibility. The ECB's accounting is On-Balance Sheet Netting in the parlance of the world of commercial banking, and is the objective of a Cash Management product called Notional Pooling. On-Balance Sheet Netting is only possible for commercial banks where:

- The assets and liabilities being pooled are in the same currency
- They belong to the same counterparty
- They have the same tenor

The key point is the second one: in corporate banking the holders of assets and liabilities in a pool are normally different subsidiaries of the same ultimate parent company, and the bank uses documentary techniques so as to be allowed to construe them as the same counterparty, such as:

- Cross-guarantees
- Declarations of joint and several liabilities
- Agreement to grant the bank an unrestricted right of close-out

In effect the subsidiaries waive their independence as regards the balances held in the Pooling system, and allow the bank to use any deposits in the system to pay off any loans.

ECB's accounting and On-Balance Sheet Netting

In order to justify its accounting treatment, the ECB must have a document signed between itself and the NCBs in which the NCBs confer similar rights on the ECB.

The ECB's accounting treatment is, as stated, On-Balance Sheet Netting, the elimination from its accounts of the amount in the arrangement by which credit balances and overdraft balances match. As at 31/12/16 these amounts were:

	2016 €	2015 €
Due to euro area NCBs in respect of TARGET2	1,058,484,156,256	812,734,808,529
Due from euro area NCBs in respect of TARGET2	(908,249,140,203)	(730,463,422,714)
Matched Balance	(908,249,140,203)	(730,463,422,714)
Net deposit as a result of excess of "Due to"	150,235,016,053	82,271,385,815

In Notional Pooling the bank has the right to seize the cash balances and pay off the overdrafts, and the system is tantamount to the depositors guaranteeing the debts of the borrowers – although the accounting gives a picture of autonomous borrowers and depositors.

In its most advanced form – only available at Bank Mendes Gans in Amsterdam – the bank is not legally responsible for the repayment of the credit balances unless the borrowers of the same corporate group repay their loans.

The ECB's accounting treatment is akin to that of Bank Mendes Gans, which infers that the ECB is not responsible for paying back the deposits of the one set of NCBs unless the other set of NCBs repays its loans.

This is at odds with the verbal contention that all the balances are assigned to the ECB: if that were the case the ECB is responsible to the depositors for their money, and the ECB should then show the balances gross and on both sides of the balance sheet, with a note showing which NCB was a depositor and which was a borrower and for how much.

The ECB treatment is more defensible if the figures represent net claims to/from the Eurosystem as a whole.

There is no evidence, though, that the claims are legally connected in this way. The appearance is given of the borrowers and depositors being connected, but there is no statement of how the ECB achieves this in documentary terms. Under the laws establishing the ECB its shareholders are not jointly and severally liable for the debts of other shareholders.

Validity of ECB's rights in time

If these figures are the result of zero-balancing transactions in the TARGET2 end-of-day processes, the ECB only steps in between the NCBs for about 90 minutes until the start-of-day processes reinstate the direct bilateral deposits and loans between the NCBs: for 22½ hours a day, the bilateral relationships exist, for 1½ hours a day the ECB stands in between. The statements in the ECB's accounts do not state that the right of assignment is ongoing i.e. lasting 24 hours a day.

The supposition, though, is that these figures are not the result of transactions in the TARGET2 end-of-day processes, and that the ECB's intervention is on the basis of documents only: the ECB steps in for accounting purposes but the balances on the NCBs' accounts with one another remain intact, 24 hours a day.

A supplementary question poses itself: are the powers that the ECB has in order to present the figures as it does in its accounts only valid for end-of-day presentation, or are they ongoing?

Whether the ECB's papers permit On-Balance Sheet Netting

The further supposition is that, whatever legal papers the ECB has, they do not constitute what a commercial bank would need in order to present the TARGET2 imbalances as the ECB does, because the membership of the Eurosystem alone does not make the NCBs the "same counterparty". The papers would dissolve the several-but-not-joint status of each NCB's debts, and make each one jointly-and-severally liable for the debts of all the others.

Such legal papers would contradict the understanding of the Eurosystem in the minds of politicians and the public, that their NCB is not responsible for the debts of the other NCBs.

The ECB's accounting contradicts the idea that the ECB is responsible, rather than the NCBs: On-Balance Sheet Netting shows that a bank's assets are only available to meet the net amount shown. For the rest there is no access for the depositors to the general assets of the bank, only to the assets held within the same arrangement as the deposits i.e. the ECB is not the lender of the loans or the taker of the deposits, where the amounts match. Therefore it is the NCBs that owe one another.

The upshot of that would be that the ECB actually had not taken a genuine assignment of the NCBs' bilateral positions, because it was not then showing every asset and every liability gross in its own books.

ECB's ability to repay the loans

Lastly there is the practical point - the TARGET2 loans are far too large for the ECB to repay out of its own resources:

Statistic	Amount or leverage
ECB balance sheet footing as shown in its 2016 accounts	€350 billion
ECB capital	€8 billion
ECB 2016 Profit	€1 billion
ECB Provisions	€27 billion
Total of ECB balance sheet items that could be classed as capital	€36 billion

Statistic	Amount or leverage
Net figure for all Intra-Eurosystem liabilities	€192 billion
Of this, net liabilities relating to TARGET2	€151 billion
Gross liabilities relating to TARGET2	€1,058 billion
Increase in balance sheet footing of TARGET2 reported gross	€908 billion
Revised ECB balance sheet footing	€1,258 billion
ECB leverage based on all possible capital items and footing as in accounts	10x
ECB leverage based on Capital and 2016 Profit and footing as in accounts	39x
ECB leverage based on all possible capital items and revised footing	35x
ECB leverage based on Capital and 2016 Profit and revised footing	140x

The ECB's own figures would look badly over-leveraged if the TARGET2 positions were shown gross: no depositing NCB could imagine that the ECB would be able to repay its deposits if the ECB failed to obtain repayment from the other TARGET2 borrowers.

Depositing NCBs would want to have security, as they have against their loans in TARGET2: the ECB annual report says nothing about the assignment of the security that the NCBs have to ledge with one another to get the overdraft in the first place.

Even the net figure for net liabilities relating to TARGET2 is the single largest item on the ECB's balance sheet.

Conclusion on the ECB's accounting

The conclusion is that the ECB is not the original counterparty of the loans and deposits, and it does not become a counterparty due to any Zero-Balancing system.

The balances that the NCBs have with one another are opaque, because the ECB's statement of them is after assignment and netting have taken place.

It has to be a matter of great scepticism whether the ECB really is involved in these transactions at all in law. Its accounting infers that it has no responsibility to repay the gross deposits from its general asset pool, and there is good reason to believe that it is not responsible for the net deposits.

In a practical sense the ECB cannot be responsible even for the net deposits – because it does not have assets out of which to pay them.

The leading supposition is that, notwithstanding the ECB's accounting, the NCBs are exposed to one another for the gross amounts for 22½ hours a day for sure, and for the remaining 1½ hours as well because:

- The balances in the NCBs stay as they are at close of normal business: there is no Zero-Balancing of those accounts to the ECB;
- The ECB does not state that it becomes the counterparty of the NCBs, only that the NCBs' bilateral positions are re-expressed as a single position vis a vis the Eurosystem, not vis a vis the ECB: this is the same as saying that the NCBs still have claims on one another but that they have been netted for presentation purposes;
- The ECB cannot construe the different NCBs as the "same counterparty" just because they are members of the Eurosystem;

- The ECB does not have the legal papers – and nor would Member State governments sign such papers – to make each NCB jointly and severally liable for the debts of every other Eurosystem member: that would dissolve the safeguards against the mutualisation of all Eurozone public debt upon which the solvent Member States have insisted;
- No cash passes from the ECB to the lender NCBs or from the depositor NCBs to the ECB to make the assignment a matter of fact: in commercial banking an assignment of a loan is funded, or else it is known as a sub-participation;
- The loans into the ECB are far too large to be credible as operations done on the ECB's credit risk.

The assignment and netting in that case would be little more than a sham constructed for publicity purposes and to mask the reality: the NCBs have very large and ongoing exposures to one another, ones that would scarcely be approved as part of one of the Eurozone's official bailout programmes.

The direct, bilateral exposures between NCBs may be even higher than the €1 – 1.2. trillion shown by the ECB, bearing in mind the difference of €2.78 trillion between the aggregate assets of Eurosystem members and the consolidated balance sheet of the Eurosystem issued with the ECB annual report. The discrepancy points to €2.78 trillion of intra-Eurosystem dealings, a far higher figure than is visible in the ECB accounts.

If this is the construct in operation it is good for the UK, because the ECB is actually not involved in it and so the UK's capital in the ECB is not at risk – nor is the UK at risk of receiving a demand for “extraordinary support” from the ECB should things go wrong.

Impact on the UK and recommended actions

Should the ECB's accounting prove correct, however, the risk to the UK's capital in the ECB is significant, because the ECB has insufficient resources to repay the net deposits.

Should the ECB's accounting prove incorrect in understating its risks in this matter – because the ECB is responsible for gross deposits of €908 billion - the risk to the UK's capital in the ECB is very severe, because the resources needed to repay the net deposits hugely exceed what the ECB has at its disposal.

Lastly, should this last version be the case but the gross figures are even higher than what the ECB shows – because the ECB's figures are after it has carried out the initial “netting and assignment” – then the UK is at grave risk.

The uncertainties can, however, easily be resolved:

- The Bank of England should demand to see the Netting and Assignment documentation;
- The Bank of England should demand to see the end-of-day statements of all NCBs' accounts with one another, and of NCBs' accounts with one another, as of 30th June 2017, the date that served as the basis for the ECB's report dated 1st August 2017.

Extracts from Source Documents

Extracts from ECB 2016 Accounts

On pages A25-26

“Intra-ESCB balances/intra-Eurosystem balances

Intra-ESCB balances result primarily from cross-border payments in the EU that are settled in central bank money in euro. These transactions are for the most part initiated by private entities (i.e. credit institutions, corporations and individuals). They are settled in TARGET2 – the Trans-European Automated Real-time Gross settlement Express Transfer system – and give rise to bilateral balances in the TARGET2 accounts of EU central banks.

These bilateral balances are netted out and then assigned to the ECB on a daily basis, leaving each NCB with a single net bilateral position vis-à-vis the ECB only. This position in the books of the ECB represents the net claim or liability of each NCB against the rest of the ESCB. Intra-Eurosystem balances of euro area NCBs vis-à-vis the ECB arising from TARGET2, as well as other intra-Eurosystem balances denominated in euro (e.g. interim profit distributions to NCBs), are presented on the Balance Sheet of the ECB as a single net asset or liability position and disclosed under “Other claims within the Eurosystem (net)” or “Other liabilities within the Eurosystem (net)”.

Intra-ESCB balances of non-euro area NCBs vis-à-vis the ECB, arising from their participation in TARGET2,²¹ are disclosed under “Liabilities to non-euro area residents denominated in euro”. Intra-Eurosystem balances arising from the allocation of euro banknotes within the Eurosystem are included as a single net asset under “Claims related to the allocation of euro banknotes within the Eurosystem” (see “Banknotes in circulation” in the notes on accounting policies).

Intra-Eurosystem balances arising from the transfer of foreign reserve assets to the ECB by NCBs joining the Eurosystem are denominated in euro and reported under “Liabilities equivalent to the transfer of foreign reserves.

As at 31 December 2016 the non-euro area NCBs participating in TARGET2 were Българска народна банка (Bulgarian National Bank), Danmarks Nationalbank, Hrvatska narodna banka, Narodowy Bank Polski and Banca Națională a României.”

Note 11.2 on page A39

“Other liabilities within the Eurosystem (net)

In 2016 this item consisted mainly of the TARGET2 balances of the euro area NCBs vis-à-vis the ECB (see “Intra-ESCB balances/intra-Eurosystem balances” in the notes on accounting policies).

The net increase in this position resulted mainly from purchases of securities under the APP (see note 4, “Securities of euro area residents denominated in euro”), which were settled via TARGET2 accounts.

The impact of the purchases was partially offset by:

- (a) the settlement in TARGET2 of payments from euro area residents to non-euro area residents (see note 10, “Liabilities to non-euro area residents denominated in euro”);

- (b) cash received as collateral against the lending of PSPP securities (see note 8, “Other liabilities to euro area credit institutions denominated in euro”, and note 10, “Liabilities to non-euro area residents denominated in euro”);
- (c) the increase in the amounts related to the back-to-back swap transactions conducted with NCBs in connection with US dollar liquidity-providing operations; and
- (d) redemptions of securities purchased under the SMP and the first two covered bond purchase programmes, which were also settled via TARGET2 accounts.

The remuneration of TARGET2 positions, with the exception of balances arising from back-to-back swap transactions in connection with US dollar liquidity-providing operations, is calculated daily at the latest available marginal interest rate used by the Eurosystem in its tenders for main refinancing operations.

This item also included the amount due to euro area NCBs in respect of the ECB’s interim profit distribution (see “Interim profit distribution” in the notes on accounting policies).

	2016 €	2015 €
Due to euro area NCBs in respect of TARGET2	1,058,484,156,256	812,734,808,529
Due from euro area NCBs in respect of TARGET2	(908,249,140,203)	(730,463,422,714)
Due to euro area NCBs in respect of the ECB’s interim profit distribution	966,234,559	812,134,494
Other liabilities within the Eurosystem (net)	151,201,250,612	83,083,520,309

Extracts from TARGET Functional Specification (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
10	1.1 bottom para	The SSP will be operated by the three above-mentioned central banks under the control of all participating central banks including the European Central Bank (ECB).
12	1.2 bottom	The new system will preserve the decentralised framework of the Eurosystem.
13	1.2 top	In line with the current decision of the Governing Council on TARGET2, the new system must ensure that participating CBs maintain the responsibility for the business relations vis-à-vis their banks
32	2.1 diagram	Note the four types of participant in TARGET2: (i) Credit Institution from a Member State that is part of the SSP (ii) Credit Institution from a different EEA Member State (like from the UK) (ii) Central Bank from a Member State that is part of the SSP (iv) Ancillary System, like EBA EURO1
42	2.2 Accounts in the Payments Module	Each direct participant maintains an account in the PM (so-called RTGS account). The RTGS account of a direct participant is administered under the sole responsibility of the respective CB (CB where the direct participant is located or the host CB in case of remote access). Each RTGS account is identified by a BIC and unequivocally assigned to one direct participant

Extracts from TARGET Functional Specification (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
42	2.2 Overnight holding of liquidity	<p>Depending on the accounting structure used by each CB, the liquidity on the RTGS accounts can be maintained:</p> <ul style="list-style-type: none"> • intraday and overnight. In this case, the liquidity on the RTGS account at the end of the day functions as "reserve holdings". • only intraday. In this case, the liquidity is transferred back to the home accounts at the end of the business day and vice versa before the start of the next SSP business day.
43	2.2 Sources of liquidity	<p>The following sources of liquidity can be used for the execution of payments:</p> <ul style="list-style-type: none"> • balances on RTGS accounts • provision of intraday liquidity • offsetting payment flows (ie using algorithms to settle a number of queued payments)
43	2.2 Intraday liquidity in the SSP	<p>Intraday credit can be granted to the single accounts of credit institutions by the respective CB against eligible collateral. The following procedures can be used, depending on the decision of the respective CB:</p> <ul style="list-style-type: none"> • implementing credit lines on RTGS accounts (based on a pool of pre-deposited collateral) • implementing credit lines on the proprietary home accounts (ie an additional liquidity transfer between the proprietary home account and the RTGS account is necessary) • processing of intraday repo transactions <p>If the liquidity pooling functionality (virtual account) is used, the liquidity obtained intraday will be available among the group of accounts</p>
43	2.2 Credit lines in the PM	<p>If credit lines on RTGS accounts are used by CBs, the liquidity available for processing payments will be the sum of:</p> <ul style="list-style-type: none"> • the balance on the RTGS account and • the credit line. <p>This means that the balance on the RTGS account can enter, up to the respective credit line, into an "overdraft position".</p>

Extracts from TARGET Functional Specification (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
99	5.1 Overview of the Home Accounting Module	<p>The Home Accounting Module (HAM) is a common standardised optional module with basic functions offered to central banks in order to give them the possibility to avoid maintaining local home accounts that could be expensive to manage and to efficiently administer all CB's customer relationships.</p> <p>The choice to adopt HAM or to maintain the local home accounts is made for each country by the respective CB.</p> <p>HAM manages accounts that can be held by two different kinds of users:</p> <ul style="list-style-type: none"> • Credit institutions and other entities according to the rules defined by the respective CB (in the following "HAM accounts" holders) • CB's customers (correspondent and others) not allowed according to the TARGET2 Guideline to open accounts in the PM (in the following "CB's customers accounts" holders). <p>The reasons behind the opening of "HAM accounts" may differ, according to the specific situation of each individual country, for example:</p> <ul style="list-style-type: none"> • Some credit institutions may not be interested in participating directly in the RTGS system, but nevertheless are subject to minimum reserve requirements and wish to directly manage cash withdrawals, deposits, etc. (HAM accounts are held only by some credit institutions) • There could be a need to have a second set of accounts to be used to settle specific operations (eg cash withdrawals) of direct RTGS participants, which already have an RTGS account (HAM accounts for all credit institutions) <p>The reasons behind the opening of "CB's customers accounts" are to allow CB's customers to settle, through the relevant CB, transactions with all TARGET2 participants</p>

Extracts from TARGET Functional Specification (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
100 - 101	5.1 HAM – General features	<p>"HAM accounts" can be opened by:</p> <ul style="list-style-type: none"> • Direct PM participant (with an RTGS account) • Indirect PM participants (also SWIFT limited member with a SWIFT-BIC) • Credit institutions and other entities not participating in PM (neither directly nor indirectly) <p>Credit institutions holding a "HAM account" and an account in the PM have access to an automatic transfer function for start-of-day (either for the whole balance or for a specific amount) as well as end-of-day transfers from/to their RTGS accounts. In this case it is needed to have the same BIC-11 for the accounts held in PM and HAM.</p> <p>"HAM accounts" do not have payment system purposes. Only a limited number of operations can be settled on them (transactions with the CB and basic interbank transfers for the management of minimum reserve) Customer payments, cross-border payments and balances stemming from ancillary systems have to be settled in the RTGS account:</p> <ul style="list-style-type: none"> • through another participant (the selected direct participant) for credit institutions holding only an HAM account (indirect PM participants) • directly for credit institutions holding accounts both in the HAM and in the PM (direct PM participants) <p>"CB's customers accounts" can be used to settle domestic and cross-border payments (MT 202 and MT 103/MT 103+) within "CB's customers account" and towards PM. Furthermore, they can be used in order to settle payments with RTGS systems not yet migrated to TARGET2.</p> <p>For both "HAM account" and "CB's customers accounts" a storing function for future value date payments is provided (up to five TARGET working days in advance).</p> <p>All the transactions settled through the HAM are immediately final.</p>

Extracts from TARGET Functional Specification (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
101 – 102	5.1 HAM – Transaction Processing	<p>The following operations can be settled on the "HAM accounts":</p> <ul style="list-style-type: none"> • Interbank transfers among HAM accounts held at the same CB • Interbank transfers with RTGS accounts in the PM (including cross-border transactions) • Operations with the own CB including debit and credit transactions (eg cash withdrawals and deposits, etc.) • Transfers with the Standing Facilities Module in order to have access to the standing facilities (only possible via ICM) • Transactions stemming from the Reserve Management Module (remuneration and penalties) • Automatic transactions related to billing (not available from the start of TARGET2) <p>Transfers between HAM accounts held at different CBs ("cross-CB") are not possible.</p> <p>"CB's customers accounts" can process:</p> <ul style="list-style-type: none"> • Payments from CB's customers to RTGS account holders (including cross-border traffic) • Payments to CB's customers from RTGS account holders (including cross-border traffic) • Payments between CB's customers <p>Transfers between HAM accounts and "CB's customers accounts" are not allowed.</p>

Extracts from TARGET Functional Specification (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
106	Reserve Management Module – General features	<p>The Reserve Management Module (RM) is a common standardised optional module which enables the CBs to perform certain functionality for the management of reserve requirements.</p> <p>Although the functions associated with minimum reserves are not core services of the SSP, they can be offered in line with the request of some countries.</p> <p>The choice to adopt RM or to manage locally minimum reserve is up to the individual CB. For the local management specific external application have to be developed by CBs.</p> <p>The RM is accessible exclusively through a SWIFTNet interface and, from a technical point of view, is fully integrated with the other SSP modules in order to ensure a seamless "connection".</p> <p>The RM can interact with PM, HAM and PHA.</p> <p>The RM does not manage any kind of accounts; it only receives - automatically at the end of day - from PM, HAM and proprietary home accounts, the end of day accounts' balances in order to manage minimum reserves.</p> <p>Commercial banks can, normally just before the end of the day, transfer excess funds to the overnight deposit or have access to the marginal lending "on request". At the end of the day the RM receives the end-of-day account's balance only after the cut-off time related to the overnight deposit and the marginal lending.</p> <p>The RM mainly:</p> <ul style="list-style-type: none"> • verifies the minimum reserve fulfilment • calculates the interest to be paid to credit institutions for minimum reserves • calculates the penalties related to the reserve requirements infringement to be submitted to the relevant CB's validation process • notify the CBs on the minimum reserve fulfilment, due interest and possible penalties for the pertaining credit institutions • create automatically the related credit and debit instructions (the latter only after the CB validation process) and send them to PM or HAM (at the end of the maintenance period). No credit and debit instructions will be sent to PHA. <p>A credit institution using RM can maintain its reserves either on a PM account or on an HAM/PHA account, but not on both.</p>

Extracts from TARGET Functional Specification (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
109	5.3 – Standing Facilities Module – General features	<p>The Standing Facilities Module (SF) is a common standardised optional module which enables the CBs to manage standing facilities (overnight deposit and marginal lending).</p> <p>The choice to adopt this module or to manage locally standing facilities is done for each country by the respective CB.</p> <p>The SF is accessible exclusively through a SWIFTNet interface (only via ICM) and, from a technical point of view, is fully integrated with the other SSP modules in order to ensure a seamless "connection".</p> <p>The SF can interact with both PM and HAM. No interaction with proprietary home account is possible.</p> <p>The SF is able to manage:</p> <ul style="list-style-type: none"> • overnight deposit accounts • marginal lending accounts for marginal lending "on request" (in general needed for the fulfilment of minimum reserve) and automatic marginal lending (automatic transformation of intraday credit in overnight credit at the end of the day) <p>The collateral management function is managed outside the SSP and under the responsibility of the relevant CB.</p>
109	5.3 – Standing Facilities Module – Overnight Deposit	<p>As to the overnight deposit:</p> <ul style="list-style-type: none"> • Credit institutions can transfer, via ICM, liquidity from HAM or PM to the SF. It is also possible to activate the reverse transaction in order to reduce the amount deposited in the overnight account. • The SF calculates the interest to be paid on the overnight deposit and creates the related credit instructions for interest and capital. • At the start of the following business day, the SF sends automatically the capital amount and the interest to PM or HAM.

Extracts from TARGET Functional Specification (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
110	5.3 – Standing Facilities Module – Marginal lending on request	<p>As regards the marginal lending "on request":</p> <ul style="list-style-type: none">• Credit institutions deposit collateral to the relevant CB's collateral manager that, after the collateral evaluation procedures, transfers to the SF, via ICM, the information on the granted liquidity.• The SF transfers the liquidity to HAM or PM.• The SF calculates the interest to be paid by the credit institution on the marginal lending and creates the related debit instructions for interest and capital.• At the start of the following business day, the SF sends automatically the debit instructions to PM or HAM.• After the settlement the PM or HAM notifies the relevant collateral manager that releases the collateral. <p>In case of errors the SSP operator is able, on behalf of the Collateral Manager, to operate a reverse transaction from PM/HAM to SF.</p>

Extracts from TARGET Functional Specification (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
111	5.3 – Standing Facilities Module – Automatic Marginal Lending	<p>As regards the automatic marginal lending facility:</p> <ul style="list-style-type: none"> • At the end of the business day, a specific PM function singles out the amount of intraday credit not returned by each credit institution and communicates it to SF. • The SF verifies, on the basis of the list of participants eligible to make use of standing facilities, whether the credit institution is allowed to access the automatic marginal lending facility; if not, it notifies the spillover to the relevant CB responsible for applying the penalty procedure through an InterAct message. • If the credit institution is allowed to access the automatic marginal lending facility SF sends a connected payment to PM to transfer the liquidity and simultaneously decreases the respective intraday credit line. • The SF notifies the transaction to the relevant collateral manager who attributes the collateral already posted as an intraday liquidity guarantee to the marginal lending facility guarantee. • The SF calculates the interest to be paid by the credit institutions on the marginal lending and creates the related debit instructions for interest and capital amount. • At the start of the following business day the SF will send automatically to PM: <ul style="list-style-type: none"> ○ –a debit instruction for the interest and ○ –a connected payment for the refunding of the capital (debit of the RTGS account and increase of the intraday credit line) • After the settlement of the capital the PM notifies relevant collateral manager, who attributes the collateral already posted as an overnight guarantee to the intraday credit guarantee.

Extracts from TARGET 2016 Annual Report (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
4	Introduction	TARGET2 is accessible to a large number of participants. Almost 1,800 credit institutions in Europe use TARGET2 to make payments on their own behalf, on behalf of other (indirect) participants or on their customers' behalf. Taking into account branches and subsidiaries, more than 52,000 banks worldwide (and thus all of the customers of these banks) can be reached via TARGET2
6 - 7	1.1 - Turnover	<p>TARGET2 turnover in 2016 amounted to a total value of €445.9 trillion, corresponding to a daily average of €1.7 trillion.</p> <p>Similarly to 2015, the drop in the total TARGET2 turnover observed in 2016 was largely related to the launch of T2S and more specifically the migration of the central securities depositories (CSDs) in waves 2 and 3. As a consequence of their migration to T2S, final securities settlement of the cash leg of securities transactions is no longer carried out on the RTGS accounts of their participants in TARGET2.</p> <p>Instead, it takes place via the dedicated cash accounts held in T2S. In terms of geographical distribution, it is worth noting that in 2016 turnover decreased significantly in the Italian, French and Spanish component system of TARGET2.</p> <p>These drops were predominantly driven by the shift of the Italian and French securities business to T2S as well as by the changes to the Banco de España's collateral policy. In the latter case, the Banco de España updated the pledge technique (from a manual to an electronic procedure) for the mobilisation of collateral for intraday credit purposes. Thus, the repo transactions were reduced.</p> <p>A comparison of the TARGET2 turnover and the euro area's annual GDP (around €10.7 trillion) shows that TARGET2 settles the equivalent of the annual GDP in approximately six days of operations. This indicates the role and efficiency of TARGET2, which provides intraday finality for transactions and allows the funds credited to the participant's account to become immediately available for other payments. Consequently, the same euro can be reused several times by several TARGET2 participants within the same day.</p>
10	1.2 – volume of TARGET2 payments	The exact volume settled in TARGET2 in 2016 amounted to 87,896,006 transactions, corresponding to a daily average of 342,008 payments

Extracts from TARGET 2016 Annual Report (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
11 - 12	1.2 – comment on Chart B on TARGET2 volumes	<p>In the first four months of 2016, the daily average volume of ancillary system transactions was 30% lower than the volume in the same month of the previous year. This effect is mostly attributable to the migration of Monte Titoli, the Italian CSD, to T2S at the end of August 2015, and then slightly exacerbated by the migration of Interbolsa and NBB-SSS (the Portuguese CSD and a Belgian CSD) in March 2016.</p> <p>In May this negative trend stopped, owing to a change in the settlement procedure of an ancillary system not yet migrated to T2S, namely Iberclear. This change completely counteracted the decrease in volumes resulting from Monte Titoli’s migration the previous year and therefore, for the following four months, the volumes were back to 2015 levels.</p> <p>Finally, in September there was another turning point: given Monte Titoli’s migration to T2S at the end of August 2015, the year-on-year comparison from September to the end of the year includes the effect of this migration (i.e. lower annual volumes in 2015) and the observed volumes in this period, which are in absolute terms close to those registered between May and August, were 30% higher each month than in the same period in the previous year.</p> <p>All in all, the change in the settlement procedure of a single ancillary system was sufficient to counteract the reduced traffic resulting from the migrations to T2S that took place over the year, meaning that overall volumes remained almost the same as in the previous year, when there was only one migration. It should be noted however, that this counterbalancing effect will no longer be enough to maintain volumes after the migration of Iberclear in September 2017.</p> <p>As regards customer and interbank payments, volumes were close to or below zero in the first half of 2016, but gained momentum from June onwards. The overall result is almost stable volumes with respect to 2015</p>

Extracts from TARGET 2016 Annual Report (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
16	1.3 – TARGET2 and TS2 Securities	<p>TARGET2-Securities (T2S) is the pan-European platform for securities settlement in central bank money, which went live on the 22 June 2015. It brings together both securities and cash accounts on a single technical platform, the T2S platform.</p> <p>Although the accounts are centralised on a single platform, the legal and business relationships of the holders of the securities and cash accounts remain with the central securities depositories (CSDs) and national central banks respectively.</p> <p>Dedicated cash accounts (DCAs) are opened with the national central banks and used exclusively for the securities settlement business in T2S. These euro-denominated accounts, although technically held on the T2S platform, are legally part of TARGET2. At the end of 2016 there were 428 active DCAs on the T2S platform.</p> <p>In 2016, there were two T2S migration waves (wave 2 and wave 3) which brought processing volumes first to 15%, and then to 45% of the total T2S estimated volume expected once full migration is complete. The wave 2 migration took place on 29 March 2016 and included the CSDs Interbolsa (Portugal) and NBB-SSS (Belgium).</p> <p>Wave 3 took place on 12 September 2016 and included Euroclear Belgium, Euroclear France, Euroclear Nederland, VP Lux (Luxembourg) and VP Securities (Denmark). They joined BOGS (Greece), Depozitarul Central (Romania), Malta Stock Exchange, Monte Titoli (Italy) and SIX SIS (Switzerland), which had migrated the previous year.</p> <p>Charts 10 and 11 below present the daily average volumes and values of liquidity transfers from TARGET2 RTGS accounts to the DCAs. At the start of each T2S business day, liquidity is sent from TARGET2 to T2S, while, towards the end of the T2S day, any liquidity on DCAs is swept back to the RTGS accounts in TARGET2.</p> <p>During the day, liquidity can be freely transferred from TARGET2 to T2S and vice versa.</p>

Extracts from TARGET 2016 Annual Report (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
17	1.3 – TARGET2 and TS2 Securities – Note to Chart 10	<p>As depicted in Chart 10, after migration wave 2 (at the end of March), the number of daily transfers from TARGET2 to T2S increased by around one third, while a smaller increase was seen in the value of these transfers (see Chart 11). After migration wave 3 (in mid-September) the daily volume of transfers increased by around 50% and their value almost doubled. By the end of 2016, liquidity transfers from TARGET2 to T2S were, in terms of both volume and value, 100% higher compared with the beginning of the year. July and August registered lower volumes and values probably owing to seasonal effects in the summer months.</p> <p>The chart above compares the average cumulated central bank liquidity held in T2S after each T2S migration wave until December 2016.</p> <p>It can be seen that, with every migration wave, the overall intraday liquidity held in T2S shifted upwards. The largest shift in 2016 happened with migration wave 3 (Euroclear Belgium, Euroclear France, Euroclear Nederland), VP Lux (Luxembourg) and VP Securities (Denmark)), after which the average intraday central bank liquidity held in T2S rose from approximately € 20 billion to approximately €35 billion. A smaller upward shift, from approximately €16 billion to approximately €20 billion, followed migration wave 2 (Interbolsa (Portugal) and NBB-SSS (Belgium)).</p>
18	1.3 – TARGET2 and TS2 Securities – Note to Chart 12	<p>Despite the increase in liquidity held in T2S, its intraday pattern remained largely unchanged across migration waves. The liquidity is injected in T2S at the beginning of the TARGET2 night-time phase (19:30) and then its level remains rather constant until the start of the daytime phase (from 05:00 onwards). During the day, only small fluctuations occur. Around 16:00, there is a rise in the liquidity held in T2S, probably owing to participants sending liquidity to T2S to reimburse auto-collateralisation and ensure the settlement of remaining transactions. At 16:30 the liquidity in T2S sharply decreases owing to the optional cash sweep that brings liquidity back from T2S to TARGET2. The next drop, to zero, is observed towards the end of the business day and is related to the execution of the automated cash sweep from T2S to TARGET2 at 17:45, when all the remaining liquidity on DCAs is pushed from T2S back to TARGET2. It should be noted that, despite the additional migration waves in 2016 having almost doubled the overall volume of intraday liquidity held in T2S, the optional cash-sweep at 16:30 is still preferred to the automated cash-sweep at 17:45.</p> <p>The highest daily average value of the processed T2S transactions was recorded in December 2016, when it reached €578.07 billion. As it could be expected, the lowest average values occurred in the summer period, reaching €278.18 billion in August and €315 billion in July 2016.</p>

Extracts from TARGET 2016 Annual Report (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
19 - 20	1.3 – TARGET2 and TS2 Securities – Note to Chart 14	<p>Chart 14 represents the daily average of auto-collateralisation transactions in T2S per month. Although there were two migration waves in 2016, the use of autocollateralisation on flow (in yellow), - i.e. settlement transactions that are financed via credit received from a central bank and collateralised by securities that are about to be purchased – remained relatively stable throughout the year. On the contrary, auto-collateralisation on stock - i.e. where the credit received from a central bank is collateralised by securities already held by the buyer - increased significantly with both migrations (especially if considering the drops in July and August to be due to seasonal effects). Overall, the use of auto-collateralisation reflects the efficiency of T2S; as this feature reduces participants’ funding needs for their own securities activities.</p>
23	1.5 – Value of TARGET/ TARGET2 payments – Note to Chart 18	<p>The chart does not take into account the payments that take place before the start and after the end of the business day, since these transactions fall under night-time settlement category (see Section 1.5) and relate to pure accounting, e.g. liquidity transfers from the local accounting systems of central banks and fuelling of subaccounts, among other things.</p>
26 – 27	1.6 – Night-time settlement in TARGET2	<p>TARGET2 operates during the day from 07:00 to 18:00, and also offers the possibility to settle payments during the night. While in the day trade phase the system is open to regular payments business of financial institutions and ancillary systems, the night-time settlement is only for ancillary systems that connect via the Ancillary System Interface (ASI) as well as liquidity transfers from/to T2S. Other operations, such as bank-to-bank transactions or customer payments, are allowed during the day only.</p> <p>There are two night-time settlement windows: 19:30 to 22:00 and 01:00 to 07:00. The two windows are separated by a technical maintenance window, during which no settlement operations are allowed. Since the system is closed during the night to any other form of payments processing, ancillary systems can take advantage of banks’ stable and predictable liquidity situations, thereby settling their transactions efficiently and safely. On average, in 2016 around 14,000 payments, representing a value of €138 billion, were settled every night in TARGET2. The night-time windows are mainly used by securities settlement systems and by retail payment systems, which have shown an increasing interest in the service, as it helps the participating banks to comply with various provisions of the Payment Services Directive. Chart 19 shows how the volume and value settled in TARGET2 during the night have evolved since 2009. The increase in volume in November 2011 relates to a retail payment system in Germany starting to make use of the night-time settlement services in TARGET2. Since then, the number of payments settled during the nighttime has increased steadily, notably in 2014, whereas values have remained rather stable. The trend reversed in 2015 and in 2016 both night-time settlement values and volumes decreased by 24% and 15% respectively. These changes in the nighttime settlement pattern can be primarily attributed to securities settlement systems which have migrated their operations to T2S.</p>

Extracts from TARGET 2016 Annual Report (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
28	1.7 – Payment types in TARGET2	<p>Three-quarters of the TARGET2 volume is made up of payments to third parties, namely interbank traffic and customer payments. The volume of ancillary system settlement represents 15% of the total volume, 7% of the volume is generated through operations with the central bank, and the remaining share of 3% is linked to liquidity transfers. Overall, all these figures remained unchanged compared with the previous year.</p> <p>With regard to turnover, the composition is visibly different, as payments between participants represent only 38% of the total value. As a consequence of the lower values settled by securities settlement systems, in 2016 the second highest category of payments was represented by payments related to liquidity transfers (26%), replacing ancillary system settlement, which decreased by 7 percentage points. It should be noted that the decrease in the turnover of ancillary system payments, together with the turnover of other categories of payments remaining similar to in the previous year, meant an automatic increase not only in the proportion of liquidity transfers but also in the proportion of the payments related to operations with central banks (12% in 2016).</p> <p>The difference between the volume-based and value-based indicators across payment categories stems from the fact that the average sums involved in monetary policy transactions, ancillary system instructions and liquidity transfers are much larger than payments to third parties.</p>
34 - 35	1.13 – Shares of national banking communities	<p>Chart with breakdown of respective shares of each Member State that is part of the SSP.</p> <p>Commentary: In terms of volume, in 2016, similarly to previous years, the largest contributor to TARGET2 traffic was Germany, which accounted for almost half of the transactions settled in the system. Adding Spain, Italy, France and the Netherlands, the share of transactions increases to 86%, also on a par with previous years. The German share remained the same as in 2015, whereas the Spanish share increased by three percentage points to 11.3%, becoming the second largest. As regards turnover, the picture is again similar to the year before, with Germany accounting for one third of the overall value, followed by France, the Netherlands and Spain. The top four countries by turnover generated more than three quarters of the total value settled in TARGET2 in 2016. The concentration of turnover has slightly changed compared with the year before, owing to the increase in the German share by 1.3 percentage point and the Dutch share by 3 percentage points.</p> <p>It should be noted that the high concentration of both TARGET2 values and volumes in certain countries is not only the result of the size of particular markets. It can also be attributed to the fact that, since November 2007, the TARGET2 system has allowed the activities of banking groups to be consolidated around a single RTGS account held by the group’s head office, thereby increasing the concentration in countries where a large number of these groups are incorporated.</p>

Extracts from TARGET 2016 Annual Report (page numbers are the pdf page numbers)

Page	Para	Relevant Wording
35	1.15 – Pattern of intraday flows	Chart 31 shows the intraday distribution of TARGET2 traffic, i.e. the percentage of daily volumes and values processed at different times of the day in 2016. This indicator is an important one for the operator of TARGET2 as it represents the extent to which settlement is evenly spread throughout the day or concentrated at certain peak times. Ideally, the value/volume distribution should be as close as possible to a linear distribution to avoid liquidity and operational risk.
39	3.1 – RTGS accounts	In December 2016 the total number of RTGS accounts opened in TARGET2 (encompassing the direct participants, the technical accounts, the ancillary system accounts and the special-purpose accounts) was 1,969, almost 10% higher than at the end of 2015. This increase is driven primarily by the opening of new accounts by financial institutions willing to participate in non-standard Eurosystem market operations.
41	3.3 – Ancillary Systems	At the end of 2016 a total of 80 ancillary systems were settling on the TARGET2 SSP, including 24 retail payment systems/clearing houses, 30 securities settlement systems and 4 central counterparties. Despite the migration of many securities settlement systems to T2S, these figures are in line with 2015 (when there were 79 ancillary systems in total), mainly due to the fact that the systems, which migrated to T2S left a portion of their activities still in TARGET2 (e.g. non-settlement related activity, such as processing of corporate actions, issuance services, repo transactions or transactions specific for the local market).
54	Annex	Table of distribution of payment flows in TARGET2 by country

BL/22.8.17