



EUROPEAN CENTRAL BANK  
EUROSYSTEM

# TARGET Annual Report 2014

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# Introduction

The market infrastructure for payments<sup>1</sup> is one of the three core components of the financial system, together with markets and institutions. It consists of the set of instruments, networks, rules, procedures and institutions that ensure the circulation of money. The principal objective of this segment of the financial system is to facilitate the execution of transactions between economic agents and to support the efficient allocation of resources in the economy.

The Eurosystem has the statutory task of promoting the smooth operation of payment systems. This is crucial for a sound currency, for the conduct of monetary policy, for the functioning of financial markets, and for supporting financial stability. A key instrument which the Eurosystem uses for carrying out this task<sup>2</sup> is the provision of payment settlement facilities. To this end, the Eurosystem operates the TARGET2 system, the second-generation Trans-European Automated Real-time Gross settlement Express Transfer system<sup>3</sup> for the euro.

In May 2008 TARGET2 replaced the first-generation system, TARGET, which was created in 1999 by the Eurosystem for the settlement of large-value payments in euro, offering a central bank payment service across national borders in the European Union (EU).

TARGET was developed to meet three main objectives:

1. to provide a safe and reliable mechanism for the settlement of euro payments on a real-time gross settlement (RTGS) basis;
2. to increase the efficiency of inter-Member State payments within the euro area; and, most importantly,
3. to serve the needs of the monetary policy of the Eurosystem.

Similarly to its predecessor, TARGET2 is used for the settlement of payments connected with monetary policy operations, of interbank payments, and of transactions related to other payment and securities settlement systems (i.e. ancillary systems). As TARGET2 provides intraday finality, i.e. settlement is final for the receiving participant once the funds have been credited, it is possible to reuse these funds several times a day.

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<sup>1</sup> A payment is defined as the process by which cash, deposit claims or other monetary instruments are transferred between economic agents.

<sup>2</sup> The Eurosystem fulfils this task by:

- providing payment and securities settlement facilities (TARGET2) as well as a mechanism for the cross-border use of collateral (the correspondent central banking model (CCBM));
- overseeing the euro payment and settlement systems;
- setting standards for the use of securities clearing and settlement systems;
- acting as a catalyst for change (e.g. promoting the SEPA initiative).

<sup>3</sup> A real-time gross settlement (RTGS) system is a payment system in which processing and settlement take place in real time (i.e. continuously), rather than in batch processing mode. It enables transactions to be settled with immediate finality. Gross settlement means that each transfer is settled individually, rather than on a net basis. TARGET and its successor TARGET2 are examples of RTGS systems.

In addition, TARGET2 offers harmonised services at the EU level and a single pricing structure. It provides ancillary systems with a harmonised set of cash settlement services and supports its users with enhanced liquidity management tools. In this manner, it contributes to financial integration, financial stability and liquidity efficiency in the euro area.

TARGET2 is accessible to a large number of participants. More than 1,700 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, around 56,000 banks worldwide (and thus all of the customers of these banks) can be reached via TARGET2.

## The report and its structure

This report is the fifteenth edition of the TARGET Annual Report. The first edition was published in 2000, covering TARGET's first year of operation (1999). As in previous years, the report presents the main facts relating to the TARGET system, taking into account the developments which took place in TARGET2 in the course of 2014. The report is mainly addressed to decision-makers, practitioners, lawyers and academics wishing to acquire an in-depth understanding of TARGET2. It will hopefully also appeal to students with an interest in market infrastructure issues and TARGET2 in particular.

Chapter 1 of the report provides information on TARGET2 traffic, its performance and the main developments that took place in 2014. Chapter 2 provides a general overview of the TARGET2 system. The report is complemented by annexes that present details of the main features of TARGET2, a chronology of developments in TARGET/TARGET2, a list of general terms and abbreviations, and a glossary.

In addition to the core content, the report includes five boxes, providing detailed information on topics of particular relevance in 2014 or an in-depth analysis of a specific TARGET2 feature. The boxes focus, respectively, on measuring the seasonal patterns of TARGET2 payment activity, on the traffic slowdown in TARGET2 in connection with the migration to SEPA, on the cross-border payment networks, on the new criteria for the identification of critical participants and on getting ready for TARGET2-Securities (T2S). In the report, the references made to the first-generation TARGET system (which was in operation from January 1999 to May 2008) are also applicable to its second generation, TARGET2 (which has been in operation since November 2007).

# Chapter 1

## TARGET2 activity in 2014

In 2014 TARGET2 confirmed its leading position in the European landscape, settling 91% of the total value of large-value payment systems in euro, and in the world as one of the biggest payment systems. The total turnover processed remained relatively stable compared with the previous year and amounted to €492 trillion, whereas the total volume of payments decreased by 2.4% to 90,337,036 transactions, owing to the changes in the customer payments landscape brought about by the migration to SEPA.

The availability of the Single Shared Platform (SSP) of TARGET2 in 2014 stood at 100%, as in the previous year. Finally, the highest daily turnover of the year was registered on 30 April, with a total value of €3,155 billion, and the highest daily payments volume was registered on 30 June 2014, when 568,060 transactions were processed.

### 1 Evolution of TARGET2 traffic

**Table 1**  
Evolution of traffic in TARGET2

	Value (EUR billions)			Volume (number of transactions)		
	2013	2014	Change (percentages)	2013	2014	Change (percentages)
<b>TARGET2 overall</b>						
Total	493,442	492,431	-0.2	92,590,134	90,337,036	-2.4
Daily average	1,935	1,931	-0.2	363,099	354,263	-2.4

Source: ECB.

Notes: There were 255 operating days in 2013 and in 2014.

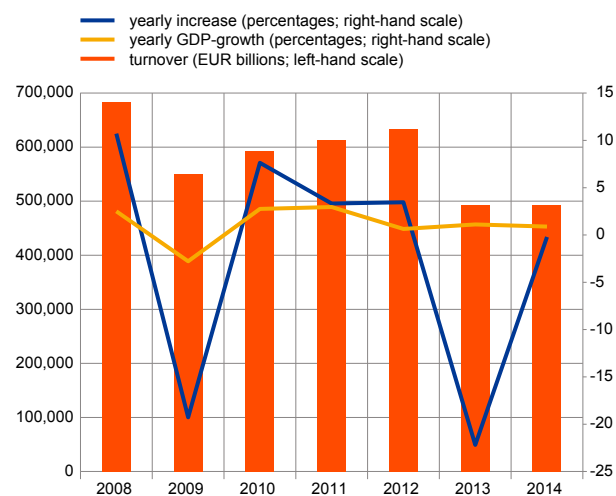
#### 1.1 TARGET2 turnover

TARGET2 turnover in 2014 amounted to a total value of €492.4 trillion, corresponding to a daily average of €1.9 trillion. Chart 1 shows the evolution of TARGET2 traffic over the last seven years. After a substantial drop owing to the impact of the financial crisis<sup>4</sup>, TARGET2 settlement volumes recovered steadily from 2009 until 2012, with an annual growth rate ranging from 7% to 3%. The sudden drop in 2013, by 22%, was mainly due to a change in the statistical methodology. This change involved some transactions ceasing to be included in the aggregate representing the turnover<sup>5</sup> as the technical consolidation of all payment activities on the SSP of TARGET2 was

<sup>4</sup> The change in value from 2008 to 2009 was also affected by a statistical reclassification, whereby only the transactions implying a change in the ownership of the funds were counted. For more information, please refer to the TARGET Annual Report 2009.

<sup>5</sup> See the box entitled "Changes to the statistical framework of TARGET2", *TARGET Annual Report 2013*, ECB, May 2014.

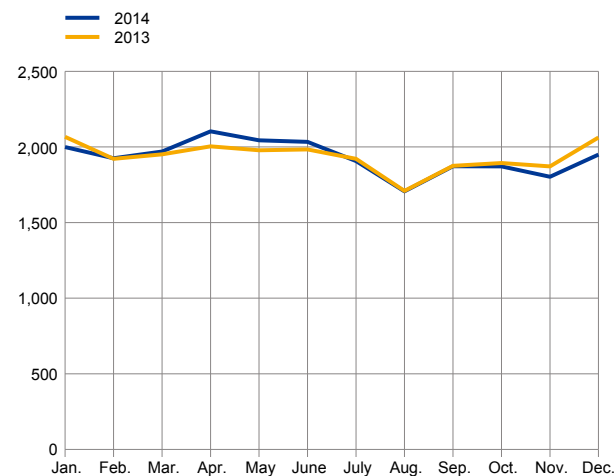
**Chart 1**  
TARGET turnover



Source: ECB.

**Chart 2**  
Average daily TARGET2 turnover

(EUR billions)



Source: ECB.

completed, which led to less interaction between the SSP and the local systems of central banks. In 2014 turnover remained largely stable compared with the previous year, registering only a minor drop of 0.2%.

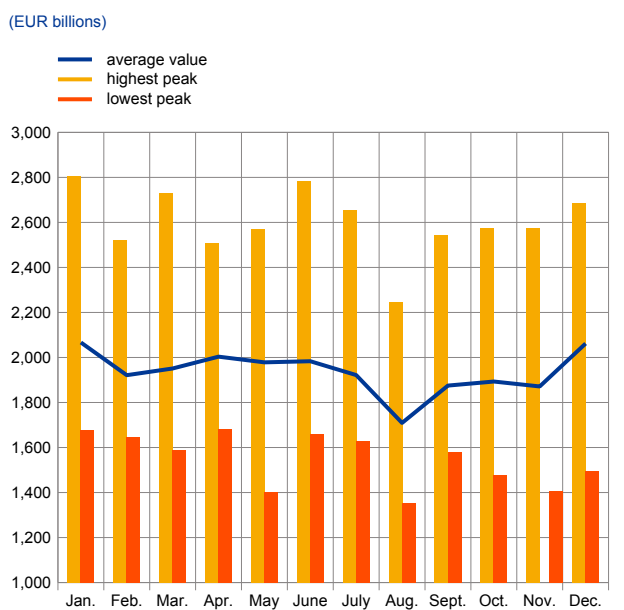
The reason for the stagnation is twofold. First, there was a general decrease in several TARGET2 traffic segments and regions, which could not be offset by the growth in other segments or countries. The sharp decrease in the volume of customer payments (see Box 2) translated into lower turnover generated at system level by this payment category and was accompanied by a small slowdown in the interbank payments segment as well. At the same time, operations with the central banks decreased compared with last year on account of a lower provision of central bank liquidity to the euro area banks. These decreases could not be offset by the substantial growth observed in ancillary system traffic. In terms of the geographical distribution of the changes, TARGET2 turnover increased substantially in Italy and partly also in Germany, in both cases owing to substantial growth in the settlement of transactions related to securities settlement systems, while a drop was registered in the Netherlands, driven by internal changes in a couple of big banks, and in general in the countries most affected by the crisis. Second, as Chart 1 shows, euro area GDP did not grow substantially in 2013. Since the values settled in TARGET2 broadly mirror the developments in euro area economic activity, it was reasonable to expect that turnover in TARGET2 would also remain fairly stable.

Interbank transactions (transactions exclusively involving credit institutions) accounted for almost 91% of the total value generated by payments between market participants in 2014, whereas the remaining share was composed of customer transactions

(i.e. transactions processed on behalf of a non-bank party, be it an individual or a corporate). This distribution is largely similar to the one recorded in 2013.

Chart 2 depicts the average daily turnover generated in TARGET2 for each month in 2013 and 2014. The patterns for each year are very similar and the average values more or less mirror each other, with the months of January, November and December being slightly higher in 2013, whereas higher average values were registered from April to June in 2014. This mirrors the general evolution in turnover, namely stagnation between the two years, as well a similar seasonal pattern.

**Chart 3**  
Monthly peaks, troughs and averages of TARGET2 daily values in 2014



Source: ECB.

Chart 3 displays the highest and lowest daily TARGET2 values for each month of 2014, as well as the average daily values for each month. Usually the days with the highest peaks tended to be at quarter ends, typically on the last day of the month, owing to reimbursements and due dates in various financial markets. This was the case, for example, in June and September 2014, although a higher peak was recorded in April than in March. 30 April was also the day with the greatest turnover of the year, with a total value of €3,155 billion being settled in TARGET2.

Throughout 2014 the seasonality of TARGET2's turnover, expressed by the difference between the highest and the lowest value, was 57%, in line with the 52% recorded the previous year. The gap remains rather significant considering that there were no major or notable events in 2014. A detailed analysis regarding the seasonal patterns present in TARGET2's turnover is presented in Box 1, entitled "Measuring the seasonal patterns of TARGET2 payment activity".

Peaks and troughs in the system's values can also be influenced by other factors, such as TARGET2 holidays or the end of reserve maintenance periods. For example, the lowest values are typically observed on days that are national holidays in some Member States, such as Ascension Day in May, or during the summer holidays.

**Box 1**  
Measuring the seasonal patterns of TARGET2 payment activity

Disentangling the overall trend of payment activities in TARGET2 from regular deviations around the trend owing to seasonal patterns helps to ensure a better understanding of the system itself and forms the basis for deriving predictions about the future evolution of payment activities.<sup>6</sup> The analysis conducted allows identifying the following patterns in TARGET2:<sup>7</sup>

**Daily effects:** In comparison with an average Friday, the total value of payments settled on an average Tuesday is 2.6% less, while the effect is even stronger on Thursdays, which see 4.4% less activity. By contrast, the strongest impact occurs on Wednesdays, when the average total value of settled payments is 22.9% higher than on an average Friday and much higher than on any other weekday. The very high total value of payments on Wednesdays is largely due to the Eurosystem's one-week liquidity providing operations (i.e. the main refinancing operations), which are settled on that day of the week and which are typically of a very large magnitude. Moreover, the central bank operations are usually followed by increased interbank market activities for allocating the received funds.

<sup>6</sup> Payment activity is measured by the total daily value of all payments in TARGET2.

<sup>7</sup> The analysis is based on an estimation of a linear regression model, including a number of variables capturing the different types of seasonal pattern.



**Monthly effects:** The months of February, August, September, October and November typically have a lower total value of payments compared with December. The high value of payments in December is likely to be partially caused by financial transactions which are concluded before the end of the year (for example, owing to contractual payments or reporting obligations). The largest negative coefficient is found for the months August and September, for which the total value of payments is 15.4% and 6.8% lower compared with December, respectively. Thus, in line with anecdotal evidence, there is less payment activity during the summer months. The estimation also reveals that for most of the months (January, March, April, May, June and July), no systematic pattern can be found.

**Beginning and end of maintenance period:**<sup>8</sup> The analysis revealed that the total value of payments is 4.3% lower at the end of the maintenance period than on an average TARGET2 day, whereas the beginning of the maintenance period sees higher traffic, but the increase is not statistically significant. One reason for this pattern is that a number of banks try to fulfil their reserve requirements before the end of the maintenance period, which means that less trading takes place on the last few days of the maintenance period. Fulfilling the reserve requirement in advance has the advantage for banks that they can avoid borrowing at the typically higher interest rates at the end of the maintenance period.

**Table A**  
Regression results

Variable	Coefficient	Std. error
Monday	0.0220	0.0140
Tuesday	-0.0260**	0.0130
Wednesday	0.2290***	0.0140
Thursday	-0.0440***	0.0130
January	0.0110	0.0290
February	-0.0470*	0.0280
March	-0.0190	0.0300
April	0.0250	0.0300
May	0.0230	0.0280
June	0.0050	0.0290
July	-0.0400	0.0290
August	-0.1540***	0.0280
September	-0.0680**	0.0280
October	-0.0590**	0.0280
November	-0.0610**	0.0280
Beginning of maintenance period	0.0050	0.0120
End of maintenance period	-0.0430***	0.0100
Beginning of month	0.0450***	0.0120
End of month	0.1430***	0.0190
Holidays T2 (t=-1)	-0.0450	0.1160
Holidays T2 (t=+1)	0.1120**	0.0490
Holidays US (t=0)	-0.1470***	0.0230
Holidays UK (t=0)	-0.0870***	0.0270
Holidays EU (t=0)	-0.0580***	0.0210
Intercept	28.0250***	0.0280

Notes: Number of observations: 510. R-squared: 0.6668. Sample period: 02/01/2013-31/12/2014. \*, \*\* and \*\*\* refer to the level of statistical significance (10%, 5%, 1%, respectively). Estimation: OLS with robust standard errors.

<sup>8</sup> The coefficient of the variable for the beginning of the maintenance period is positive, but not statistically significant. By contrast, the coefficient of the variable for the end of the maintenance period is negative and highly significant.

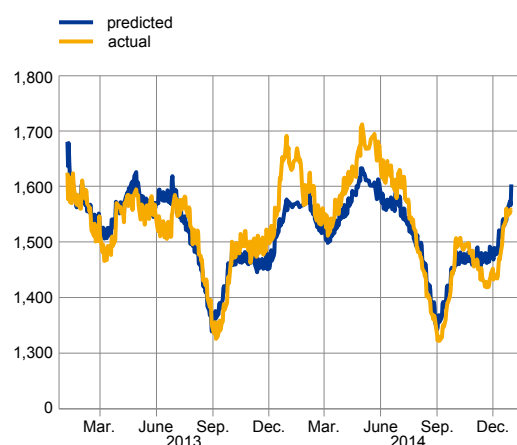
**Beginning and end of month:** On average, the total value of payments during the first few days of the month is 4.5% higher. The effect is even larger during the last few days of the month, when the total value increases by 14.3%. The increase in payment activity at the beginning and end of the month is possibly related to the manifold contractual payments and reporting obligations which occur at a monthly frequency.<sup>9</sup>

**Holidays:** While no statistically significant effect is found for the business day before a TARGET2 holiday, one day after a TARGET2 holiday the value of payments is 11.2% higher than on an average TARGET2 day. Regarding the impact of holidays in the United States, the United Kingdom and the other EU Member States, the estimation provides empirical evidence of a negative (and highly significant) impact on the total value of payments. On a US public holiday, TARGET2 experiences a 14.7% decrease in the total value of payments compared with an average day. The respective decrease in the case of holidays in the United Kingdom and the rest of the EU amounts to 8.7% and 5.8%, respectively.

### Chart

Total value of TARGET2 payments (predicted and actual), 2013-14

(EUR billions)



Notes: The plot shows the moving average (22 days) of the predicted and actual time series.

### Total value of TARGET2 payments

**(predicted and actual):** Based on the underlying linear regression model (see the additional information on the regression below), a prediction can be made for each day in the sample. The chart plots the model's prediction and the actual total value of TARGET2 payments (22-day moving average) for the full sample period. A comparison of the predicted and actual values reveals that the model's prediction is in line with the **long-term development** of the actual time series. Furthermore, the model replicates the slowdowns in the summer and the end-of-year peaks fairly well. Hence, the variables considered for this analysis capture the seasonal patterns present in the value of TARGET2 payments relatively well.

**Additional information on the regression analysis:** For the analysis, the following linear regression model is estimated with ordinary least squares (OLS) and robust standard errors:

$$\text{Log}(V_t) = c + \beta_1 X_{1,t} + \dots + \beta_N X_{N,t} + \varepsilon_t,$$

where  $V_t$  is the total value of payments at date  $t$ ,  $c$  is a constant,  $\beta_i$  is the coefficient of variable  $X_{i,t}$ , and  $\varepsilon_t$  is an error term. Table B lists the definitions for each regressor  $X_{i,t}$ .

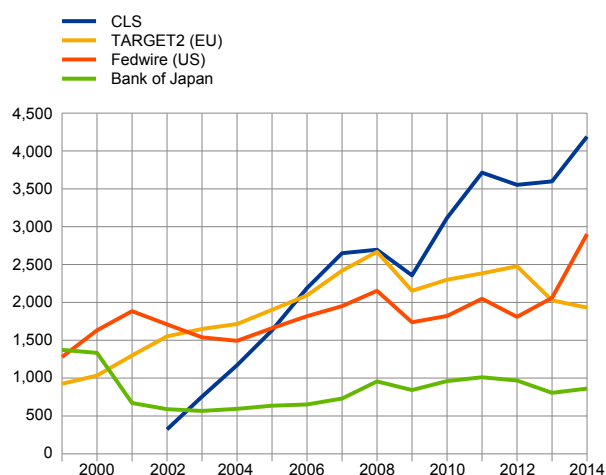
<sup>9</sup> There is also a negative effect on the total value of payments at the end of the month since money market interest rates typically increase and volumes decrease.

**Table B**  
Regressors

Regressor	Description
Daily variable	The daily variable takes a value equal to one for a specific weekday.
Monthly variable	The monthly variable takes a value equal to one for a specific month.
Beginning of maintenance period (BOMP)	The BOMP variable takes a value equal to one for the first three days of the maintenance period.
End of maintenance period (EOMP)	The EOMP variable takes a value equal to one for the last three days of the maintenance period.
Beginning of month (BOM)	The BOM variable takes a value equal to one for the first three days of the month.
End of month (EOM)	The EOM variable takes a value equal to one for the last three days of the month.
Holidays T2 (t = -1)	The variable takes a value equal to one the day before a T2 holiday.
Holidays T2 (t = +1)	The variable takes a value equal to one the day after a T2 holiday.
Holidays US (t = 0)	The variable takes a value equal to one if there is a US public holiday.
Holidays UK (t = 0)	The variable takes a value equal to one if there is a UK public holiday.
Holidays EU (t = 0)	The variable takes a value equal to one if there is a public holiday in Germany, France, Netherlands, Spain or Italy.

**Chart 4**  
Major large-value payment systems around the globe

(average daily turnover in EUR billions (equivalent))



Source: ECB.

Finally, Chart 4 provides a comparison of the traffic developments in the major payment systems in the world. In particular, it depicts the daily average turnover in euro equivalents for the last 16 years of TARGET2, Continuous Linked Settlement (CLS), Fedwire Funds (the USD-denominated RTGS system operated by the Federal Reserve System) and the Bank of Japan Financial Network System (BOJ NET). Some common patterns can be identified up to 2011. The comparison becomes more difficult in the years thereafter. TARGET2 was the only system whose traffic grew in 2012, but comparability for 2013 is hampered by the change in the TARGET2 statistical methodology. In 2014, while TARGET2 values decreased slightly, values increased in all the other payment systems. In particular, a sharp increase was registered in CLS traffic, possibly associated with the higher activity and volatility in the foreign exchange markets, and also in Fedwire.

It should, however, be taken into account that the trends observed are also a result of the volatility of the euro's exchange rate vis-à-vis the US dollar, which distorts the figures reported in Chart 4 for both Fedwire Funds and CLS.<sup>10</sup> In particular, in 2014 the dollar appreciated against the euro, resulting in higher euro-equivalent turnover for systems located in the United States.

## 1.2 Volume of transactions in TARGET2

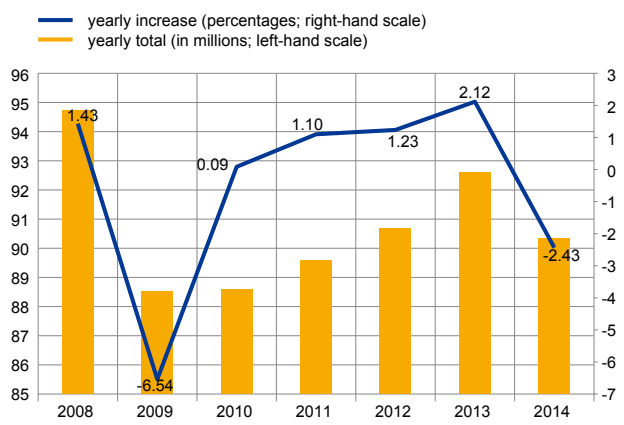
The volume settled in TARGET2 in 2014 amounted to 90,337,036 transactions, corresponding to a daily average of 354,263 payments. Compared with the previous year, the overall volume decreased by 2.4%. The traffic reduction was mainly driven

<sup>10</sup> Both Fedwire Funds and CLS publish their turnover in US dollars. The turnover in euro is calculated on the basis of the exchange rate of the ECB for the last business day of the year in question.

by a slowdown in the customer payments segment (-8.6%) which was not completely offset by the growth in other segments. The main driver behind this development is analysed in more detail in Box 2. In particular, this analysis shows that the decrease is largely attributable to the migration to SEPA instruments being completed. With this major change for the industry, some participants reconsidered the routing policies for their customer payments and ultimately chose in favour of channels other than TARGET2, mainly SEPA-compliant automated clearing houses, with some banks' customers (mainly large corporates) specifically requesting this. However, the decrease in traffic was not evenly spread across all payments categories. In particular, ancillary system payments saw an increase, growing substantially in 2014 by around 25%. This increase was mainly driven by the fact that ancillary systems aim to settle their net positions in TARGET2 at a higher frequency, which led to a higher number of transactions being remitted. Nevertheless, the increase in ancillary system traffic was

not sufficient to offset the loss of volume over the same period in interbank payments and in customer payments, the latter representing the most significant portion of TARGET2 traffic with a share of almost 60%.

**Chart 5**  
TARGET traffic



Source: ECB.

This development reverses the trend of positive growth in TARGET2 volumes registered since the outbreak of the financial crisis. Although the number of transactions never reached pre-crisis levels, traffic had been slowly recovering from the substantial drop witnessed in 2009 at small but increasing rates each year, achieving a growth rate of 2.2% last year. This year's drop represents a setback that brings the number of transactions in TARGET2 below the 2012 levels.

The Eurosystem is monitoring these developments as they may put the financial recovery of TARGET2 further at stake. A new pricing scheme was already introduced

in 2013 in order to improve cost recovery since the traffic levels were well below the objectives set during the project phase. While no further action is foreseen at the moment, it is important to keep monitoring whether volumes stabilise after the impact of the SEPA migration has been absorbed or if they will keep dropping.

## Box 2

### Traffic slowdown in TARGET2 related to SEPA migration

The 2.4% decrease in TARGET2 traffic in 2014 can be considered significant given that it clearly exceeds the normal level of volatility observed over the last few years. Consequently, an analysis was carried out to find out what was behind this development. The main findings are that the drop primarily originates from a sharp decline in customer payments, which may well be an indirect consequence of the migration to SEPA being completed towards the end of 2013 and the beginning of 2014. At this time banks seem to have taken the opportunity to completely review their routing practices for customer payments and gave higher preference to SEPA-compliant automated clearing houses, to the detriment of large-value payment systems like TARGET2. Moreover, the central banks reported that some clients (in particular large corporates) specifically instructed their banks to route their payments to SEPA-compliant automated clearing houses.

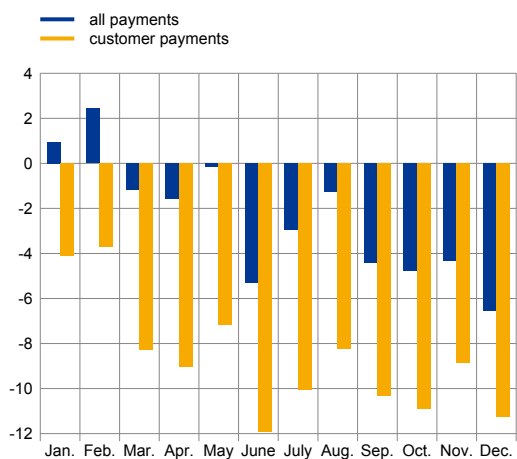
## Evolution of TARGET2 customer payment traffic in 2014:

In volume terms, customer payments accounted for 56% of all payments in 2014 and therefore represented the largest contributor to the system's overall volume. Chart A illustrates the monthly year-on-year growth rates in 2014 for both overall traffic and customer payment traffic, based on daily averages.

**Chart A**

Year-on-year growth rate per month in 2014

(daily average; percentages)



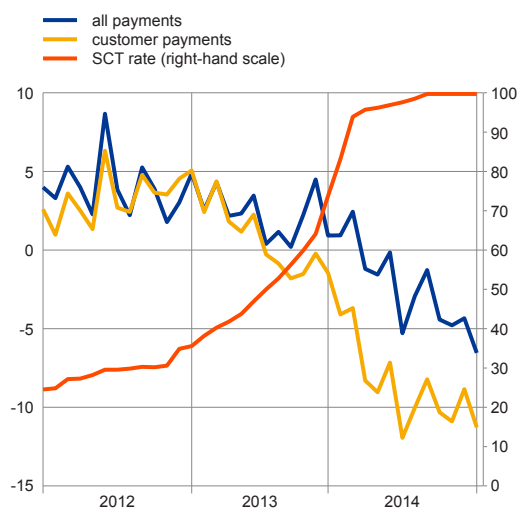
Source: ECB.

It can be observed that during the first two months of 2014 overall traffic increased slightly, while customer payment traffic was already starting to fall. As was the case for overall traffic, the slowdown intensified from March onwards. This meant that other payment categories which were still growing until then could compensate for the loss in customer payments in the first two months of 2014. Thereafter, starting from March 2014, the decrease in customer payments intensified and could no longer be fully offset, resulting in system-wide negative growth rates in terms of volume. The average daily "loss" of customer payments in 2014 vis-à-vis 2013 was approximately 20,000 transactions, which roughly translates into one full business day per month.

**Chart B**

Year-on-year growth rate per month 2012-14 (daily average) and SCT rate

(percentages; difference from previous year)



Source: ECB.

### Linking the development to SEPA migration:

Chart B depicts the developments in overall traffic and customer traffic over a longer time horizon, linking it to the SCT<sup>11</sup> rate. First, it reveals that a negative trend in customer payment volumes had already started in the third quarter of 2013, intensifying towards the end of the year in particular. This sharp decline coincides with a steep increase in the SCT rate between November 2013 and February 2014, which is captured by the green line. Thus, this chart illustrates a strong negative correlation between customer traffic in TARGET2 and the SCT rate.

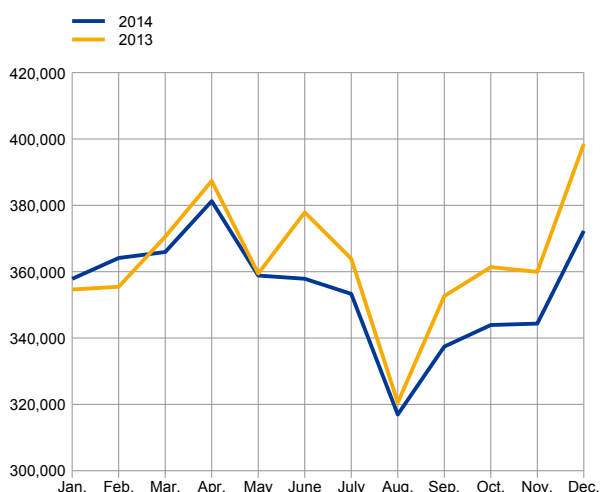
As a result, this analysis suggests that the deterioration in overall TARGET2 traffic mainly stems from the fall in customer payment

<sup>11</sup> The SCT rate refers to the share of SEPA credit transfers in the interbank domain as a percentage of the total volume of customer credit transfers in euro in the euro area. Note that as of September 2014 an official SCT rate was no longer reported. In the chart, it is therefore assumed that, thereafter, the SCT rate did not significantly change from the one observed in August 2014, i.e. it is assumed to be equal to approx. 100% for the months September to December 2014.

transactions. As regards other major payment categories, interbank traffic fell slightly, while the number of ancillary system transactions increased sharply. Since customer payments represent the main bulk of all transactions, the overall result was still a 2.4% fall in volumes for the year as a whole.

This evolution is considered to be the indirect consequence of the completion of the migration to SEPA. A large number of TARGET2 participants seem to have revised their rules which decide whether a payment is sent via TARGET2 or elsewhere. One potential underlying reason may be that banks increased the threshold above which customer payments should be channelled through TARGET2. This argument is supported by the observation that during late 2013 and early 2014, higher-value customer payments in particular were experiencing a significant drop in volume. However, given that customer payments across all value bands tended to decrease by a similar extent throughout 2014 as a whole, this suggests that a more general migration towards other payments systems took place towards the end of the SEPA migration period.

**Chart 6**  
Average daily TARGET2 volumes per month



Source: ECB.

In 2014 the average daily volume in TARGET2 on a monthly basis largely anticipated the final end-of-year developments, as shown in Chart 6. Indeed, only in the first two months of the year was the daily average volume higher than in 2013, with a difference ranging from 1% to 2%, and generally in line with the moderate growth path observed in the previous period. In March, this trend reverted and the average daily value for the next few months was almost consistently lower than the one registered in the same month of the previous year, with differences of up to 5% in June and October and 7% in December. As explained in Box 1, this development was driven by a sharp decrease in customer payments following the completion of the SEPA migration. The seasonal pattern is rather similar to the previous year and is more pronounced than the one for TARGET2 values, with the only exception being the month of June, when no spike was registered, unlike in the previous year. As in previous years, a peak in the average daily

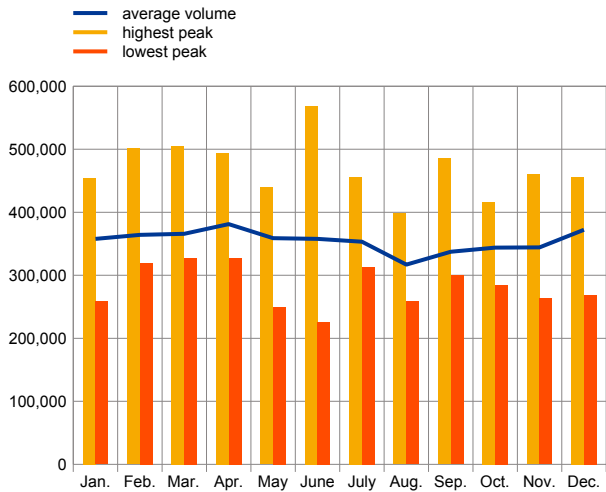
value was registered in December, reflecting the effect of the numerous end-of-year payments in the system. The highest average daily volume was in April, which was also when the highest daily average value of the whole year was registered.

Chart 7 depicts the peaks and troughs in terms of daily volume for the SSP<sup>12</sup> in 2014 and the average daily volume for each month. As with figures in terms of value, the peaks typically fall on the last day of the month, and are especially pronounced at the end of the quarter for the same reasons (i.e. deadlines in financial markets

<sup>12</sup> The data presented in this paragraph only take into account the transactions settled on the SSP of TARGET2. They may therefore differ from the TARGET2 data presented in other sections of the report, which, until the end of the transition period, also included traffic stemming from the proprietary home account (PHA) systems.

**Chart 7**

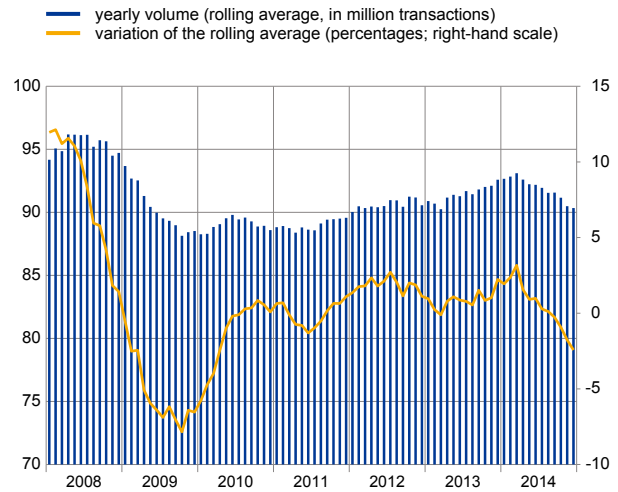
Monthly peaks, troughs and averages of TARGET2 daily volumes in 2014



Source: ECB.

**Chart 8**

TARGET2 volumes



Source: ECB.

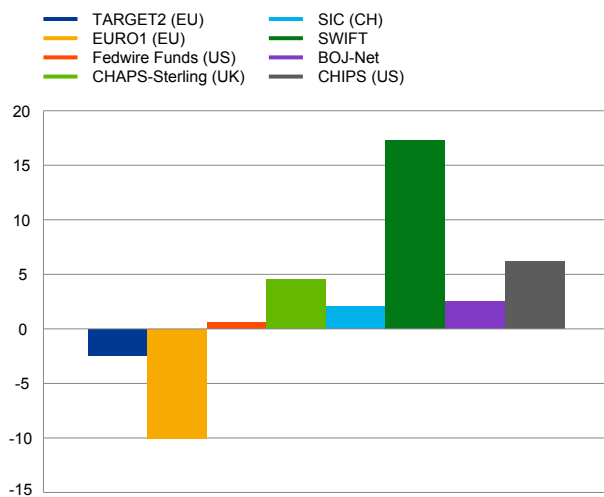
or for corporate business). In 2014 the highest daily volume was registered on 30 June 2014, when 568,060 transactions were processed. The lowest daily volume was also recorded in June, which may be a result of the fact that there were a number of national holidays in that month in 2014. Peak days were also registered in March and September, following the typical seasonal pattern.

Chart 8 shows the yearly moving average of TARGET2 volumes (i.e. the cumulative volume processed in the preceding 12 months) for each month. This indicator helps to eliminate the strong seasonal pattern observed in TARGET2 traffic. The variation of this cumulative volume from one year to the next is also shown as a percentage. The chart shows that, after a year of continuous growth, the cumulative volume started to decline in the second half of 2008 at the time when the financial crisis erupted. The number of transactions continued to drop sharply almost until the end of 2009. After that, TARGET2 volumes were roughly stable until the end of 2011, when they started to register a constant moderate growth rate until the end of the first quarter of 2014, when it reached its maximum of the post-crisis period. At that point the cumulated volume started dropping for the reasons already explained above and, in October 2014, the cumulated growth rate on a yearly basis turned negative. At the end of the year the volume stood at the levels registered between the end of 2012 and the beginning of 2013.

**Chart 9**

Comparison of the changes in traffic in some major large-value payment systems and SWIFT (2013-14)

(percentages)



Source: ECB.

Chart 9 compares the growth rate (between 2013 and 2014) of traffic in TARGET2 with the growth rates of the

major payment systems worldwide. The chart reveals that, while the other systems registered a moderate positive growth rate, both TARGET2 and EURO1 traffic declined over the period. The decline observed for EURO1 is of an even greater magnitude than that of TARGET2 and is attributable to the same phenomenon, namely the shift of traffic from large-value payment systems to automated clearing houses following the migration to SEPA. At the other end of the spectrum, the traffic in SWIFT increased considerably in 2014, similarly to the previous year. The main contributors to the growth of SWIFT traffic were principally non-European markets (e.g. the Asian market).

### 1.3 Comparison with EURO1

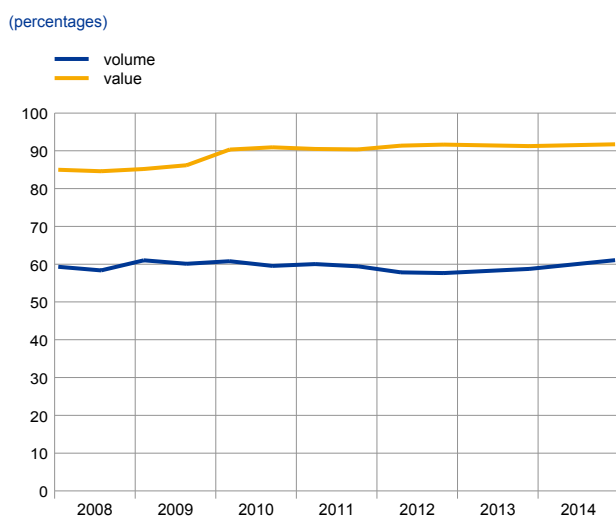
EURO1 is TARGET2's competitor in the landscape of large-value payment systems denominated in euro. The position of TARGET2 in this landscape is therefore defined as its relative share vis-à-vis EURO1, and this is depicted in Chart 10. The two systems are different by design, since EURO1 operates on a net settlement basis and only achieves final settlement in central bank money at the end of the day. Furthermore, they respond in part to different business cases, since only TARGET2

settles ancillary system transactions and payments related to monetary policy operations. However, the actual composition of the traffic in the two systems is largely made up of interbank and commercial payments. This helps to explain, in part, the relative share of TARGET2 vis-à-vis EURO1, as shown in Chart 10, which only takes into account these two payment categories. In 2014 TARGET2 processed 91% of the value settled by large-value payment systems in euro, similarly to last year. In terms of volume, the relative share TARGET2 in 2014 was 61%, representing an increase of 2% compared with the year before, when it stood at 59%.

While the development in volume cannot be attributed to growth in TARGET2 traffic, as explained in the previous paragraph, its root cause does indeed lie in the same phenomenon, namely the general migration of customer payments from large-value payments to SEPA compliant automated clearing houses. A deeper analysis of traffic evolution in the two systems revealed that customer payments decreased in parallel in the two systems, but the relative impact in EURO1 was higher

than the one occurred in TARGET2. A previous comparison had shown that in the last few years EURO1 had grown at a faster pace than TARGET2 in the low-value segment (i.e. payments below €50,000), while it gained less ground than TARGET2 in the higher-value segments. This could be the reason why, in relative terms, more payments left EURO1, since the retail transactions that migrated to SEPA are typically of a low denomination.

**Chart 10**  
Market share of volumes and values settled in TARGET2 vis-à-vis EURO1<sup>1)</sup>



Source: ECB.

1) This chart is not affected by the change in the statistical methodology implemented in 2013 since the calculations are based on interbank and customer payments only, and do not include transactions with the central banks, which were the ones most affected by the methodological change.



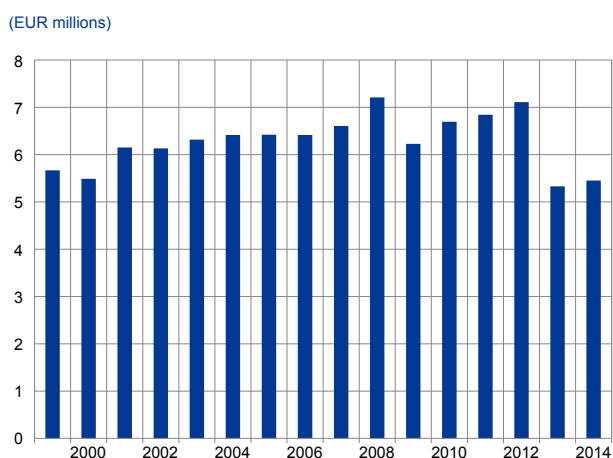
When reading Chart 10 it should in any case be kept in mind that it does not provide a full picture of the banks' routing preferences vis-à-vis all systems, but only a partial picture of the market's preferences related to the settlement of large-value euro-denominated transactions. In particular, the extent to which payments are channelled through automated clearing houses or correspondent banking arrangements is not reflected in this chart.

## 1.4 Value of TARGET/TARGET2 payments

Chart 11 shows the evolution of the average value of a TARGET payment from 1999 until 2014. In 2014 the average value of a payment stood at €5.5 million, representing an increase of 2% compared with the previous year. In the absence of other significant developments that may have an impact on the average payment value, such as an increased number of monetary policy operations, the small growth registered in 2014 could reflect the combined effect of two phenomena. The first is the decrease in customer payments traffic, meaning that payments of smaller sizes left the TARGET2 system, together with the increase in ancillary system traffic, typically characterised by high-value transactions. The second is the intensification of activity in the money market, both in terms of the number of deals and of the average payment size (see section 1.10 for further details).

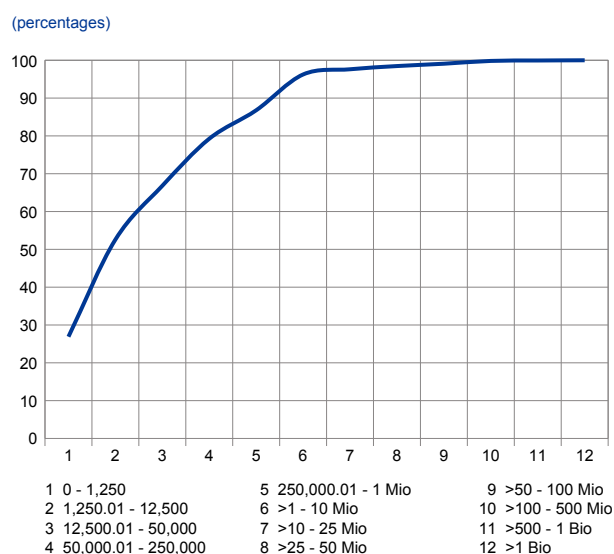
Chart 12 illustrates the distribution of TARGET2 transactions per value band, indicating the volume shares that fall below a certain threshold. The picture remained largely unchanged compared with the previous year, with only a minor decrease of 1% in the lowest value band, possibly attributable to the decrease in customer payments. However, as indicated in Box 1, the decrease has been rather homogeneous across

**Chart 11**  
Average value of a TARGET payment



Source: ECB.

**Chart 12**  
Cumulative distribution of TARGET2 transactions across value bands in 2014

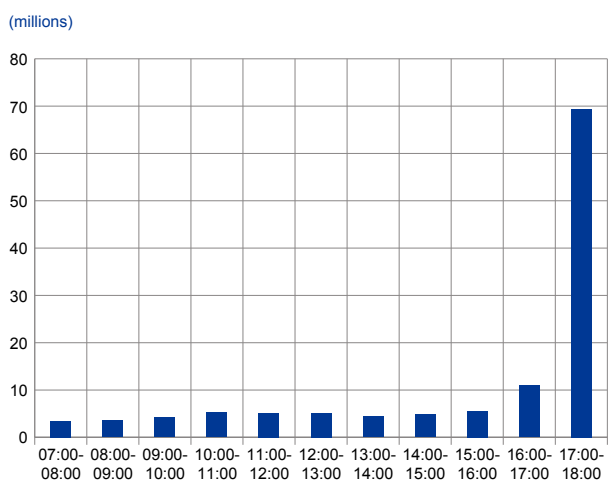


Source: ECB.

all value bands of customer payments; therefore, its impact on the volume distribution is rather limited. Overall, more than two-thirds of all TARGET2 transactions were for values lower than €50,000 and payments in excess of €1 million accounted for 13% of traffic, a percentage that grew by 1% year-on-year in the last two years. This shows that TARGET2 traffic is growing at a relatively faster speed in the high-value segment.

On average, there were 224 payments per day with a value above €1 billion, which accounted for 0.1% of payment flows. From the wide distribution of transaction values, the median payment in TARGET2 is calculated as roughly €12,000, indicating that half of the transactions processed in TARGET2 every day have a value lower than this amount. This figure, which has remained stable over recent years, confirms that TARGET2 offers a range of features attracting a high number of low-value transactions, especially of a commercial nature. Although the picture has changed slightly since the migration to SEPA instruments for retail payments, particularly as regards commercial payments, TARGET2 is still widely used for the low-value payments compartments, especially for urgent customer transactions. This phenomenon is not an isolated one and is also a characteristic of other large-value payments systems worldwide.

**Chart 13**  
Intraday pattern in 2014



Source: ECB.

Chart 13 depicts the average value of TARGET2 payments executed at different times of the day. The chart indicates that in 2014, as in previous years, TARGET2 settlement was marked by a strong intraday pattern. After the opening of the system at 7 a.m. CET, the hourly average value of transactions fluctuates minimally throughout the day. Between 10 a.m. and 11 a.m. the average value slightly increases owing to the settlement of CLS transactions and other ancillary systems around this time. A more visible increase is registered between 4 p.m. and 5 p.m., when ancillary systems such as EURO1 settle their cash balances in TARGET2. The last hour of operations, between 5 p.m. and 6 p.m., is reserved for interbank transactions, while the cut-off time for other payment types is 5 p.m. The average size of payments increases dramatically over this time owing to banks squaring their balances and refinancing themselves on the money market.

Compared with the previous year, the average payment value in this period decreased by almost 40%, possibly owing to the lower levels of refinancing activity with the central banks in 2014. 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 (see Section 1.5 of Chapter 1) and relate to pure accounting, e.g. liquidity transfers from the local accounting systems of central banks and fuelling of sub-accounts, among other things.

## 1.5 Night-time settlement in TARGET2

TARGET2 operates during the day from 7 a.m. to 6 p.m., 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, the night-time settlement is only for ancillary systems that connect via the Ancillary System Interface (ASI). Other operations, such as bank-to-bank transactions or customer payments, are allowed during the day only.

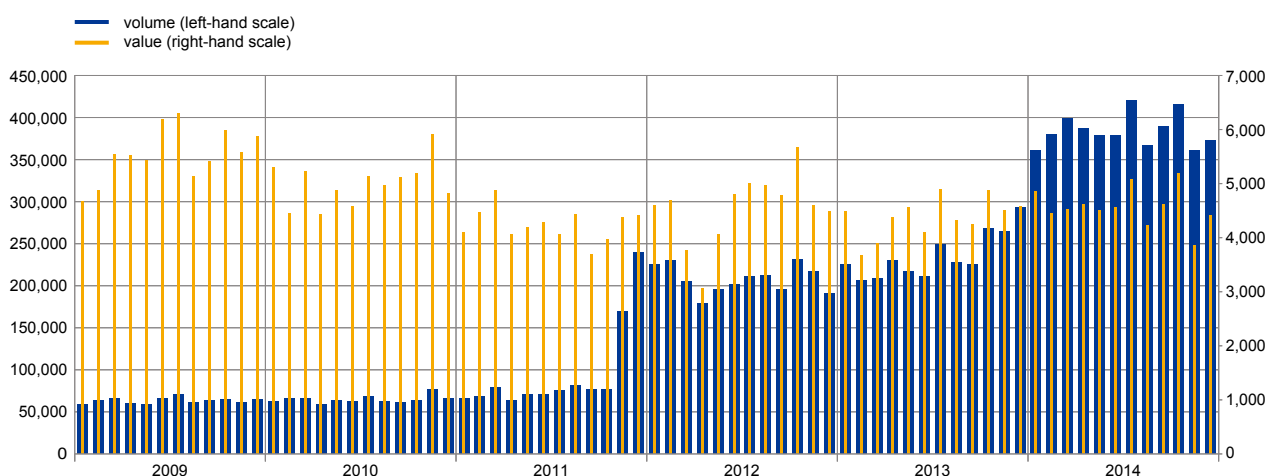
There are two night-time settlement windows: 7.30 p.m. to 10 p.m. and 1 a.m. to 7 a.m. The two windows are separated by a technical maintenance window, during which no settlement operations are allowed.

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 2014 around 18,000 payments, representing a value of €215 billion, were settled every night in TARGET2. In earlier years, the night-time windows were mainly used by securities settlement systems. However, in recent years retail payment systems have shown an increasing interest in the service, as it helps the participating banks to comply with various provisions of the Payment Services Directive<sup>13</sup>. Indeed, the average nightly settlement volume increased by over 60% in 2014 compared with 2013, having already increased by 10% the year before.

Chart 14 shows how the volume and value settled in TARGET2 during the night have evolved since 2009. The increase in volume in November 2011 corresponds 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 night-time has increased steadily, notably in 2014, whereas values have remained rather stable. In 2014 securities settlement systems accounted for 11% of the night-time volume and 53% of the value, with retail payment systems accounting for the remainder.

**Chart 14**  
Night-time settlement in TARGET2

(number of transactions; EUR billions)



Source: ECB.

<sup>13</sup> Directive 2007/64/EC on payment services in the internal market.

## 1.6 Payment types in TARGET2

Charts 15 and 16 present the breakdown of TARGET2 volumes and turnover by type of transaction. Traffic is divided into four categories: payments to third parties (e.g. interbank transactions or customer transactions), payments related to operations with the central bank (e.g. monetary operations or cash transactions), ancillary system settlement, and liquidity transfers among participants belonging to the same group. Almost three-quarters of the TARGET2 volume is represented by payments to third parties, namely interbank traffic or customer payments. This percentage has decreased by four percentage points compared with last year owing to the reduction in the customer payments segment and (to a lesser extent) interbank traffic. Ancillary system settlement represents 17% of the total volume, up by 4% compared with 2013 (the segment grew by 26% in 2014), 7% of the volume is generated through operations with the central bank, and the remaining share of 3% is linked to liquidity transfers, both unchanged compared with the previous year.

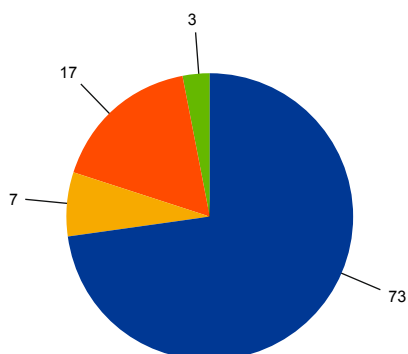
Turning to turnover, the composition is visibly different, as payments between participants represent only one-third of the total value. The second highest share is represented by payments related to ancillary system settlement, which increased by 3% compared with the previous year as a consequence of the higher volumes settled. The payments related to liquidity transfers remained largely unchanged in 2014, whereas the share of payments related to operations with central banks shrank to 10% of the overall value (4% down from the previous year) as a consequence of the lower recourse to central bank refinancing in 2014. A further reason for this decrease is the technical consolidation of all payment activities on the SSP of TARGET2, which led to lower interaction between the SSP and the local systems of central banks.

**Chart 15**

### Breakdown of TARGET2 volume in 2014

(percentages)

- payments between market participants
- payments related to operations with the central bank
- payments related to ancillary settlement
- payments related to liquidity transfers



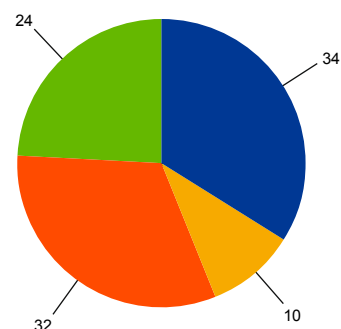
Source: ECB.

**Chart 16**

### Breakdown of TARGET2 turnover in 2014

(percentages)

- payments between market participants
- payments related to operations with the central bank
- payments related to ancillary settlement
- payments related to liquidity transfers



Source: ECB.

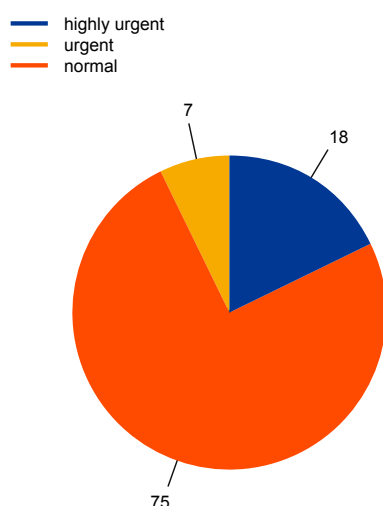
## 1.7 The use of prioritisation

Among the features of TARGET2 that support participants to optimise their use of liquidity are the priority options, thanks to which participants can reserve a certain amount of liquidity for specific payment categories. When submitting payments in TARGET2, participants can assign them a certain priority: “normal”, “urgent” or “highly urgent”. In general, payments are settled immediately on a “first in, first out” (FIFO) basis, as long as sufficient liquidity is available in the RTGS account of the participant. However, if this is not the case, payments which cannot be settled immediately are

queued according to their priority. Participants can reserve a determined amount of their liquidity for each priority class, and less urgent payments are made when the excess liquidity is sufficient. This is a way of securing liquidity for more urgent payments. The priorities for pending transactions can be changed at any time via the information and control module.

**Chart 17**  
Use of priorities in TARGET2 in 2014

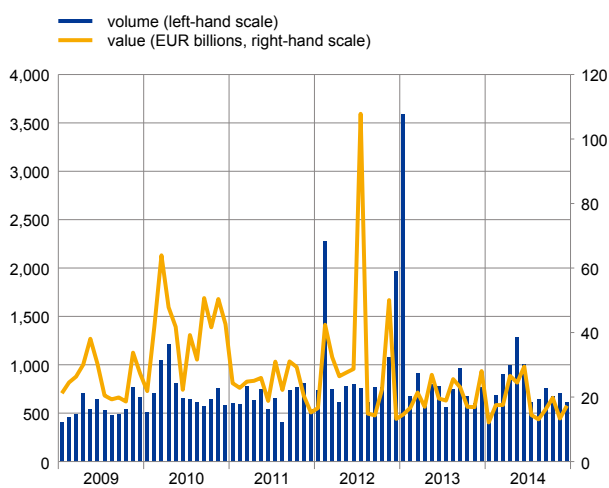
(percentages)



Source: ECB.

Chart 17 gives an overview of the use of priorities in TARGET2 in 2014 in terms of the overall TARGET2 volume. It shows that three-quarters of transactions were assigned normal priority, while only 7% and 18% were urgent and highly urgent, respectively. The use of the highly urgent priority has increased slightly compared with last year (up by 4%), but, as in previous years, the vast majority of payments are of “normal” priority, and banks only assign the urgent priority to a limited number of payments. Participants acknowledge the benefits brought by this feature, which helps them to manage their liquidity.

**Chart 18**  
Non-settled payments on the SSP



Source: ECB.

## 1.8 Non-settled payments

Non-settled payments in TARGET2 are those transactions that are not processed by the end of the business day owing to a lack of funds in the account to be debited or as a result of breaching the sender’s limit, and are ultimately rejected. Chart 18 shows the evolution of the daily average of non-settled payments on a monthly basis between 2009 and 2014 in terms of both volume and value. The average daily number of non-settled transactions in 2014 was 781, 20% lower than the figure registered for the previous year, which was mainly driven by a peak in January. The average daily value of non-settled payments amounted to €18 billion, 10% down from last year’s value. Overall, non-settled payments in 2014 represented 0.22% of the total daily volume and 0.96% of the total daily turnover

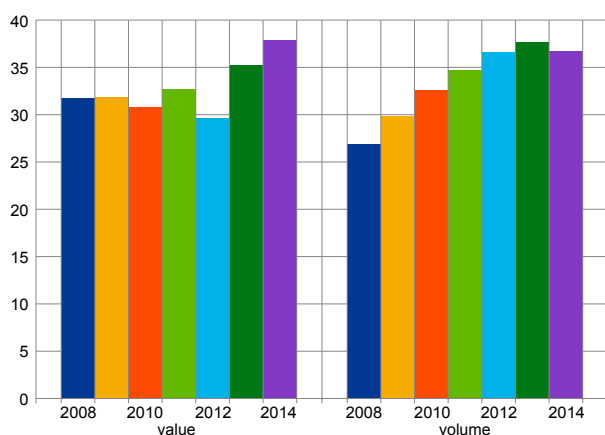
in TARGET2. The levels can be considered low and confirm that the distribution of liquidity across participants was appropriate throughout that period. Further studies conducted on the use of credit lines in TARGET2 revealed that participants do indeed rely mainly on the liquidity available on the account to settle payments, while less than 20% of turnover on average is settled through recourse to credit lines.

## 1.9 Share of inter-Member State traffic

The share of inter-Member State traffic in TARGET2 indicates the percentage of traffic that is exchanged between participants belonging to different banking communities. Chart 19 shows that, in 2014, this share amounted to 38% in value and 37% in volume. The share of inter-Member State payments in value increased 3 percentage points compared with the year before, whereas their share in volume decreased by 1%.

**Chart 19**  
Share of inter-Member State traffic in TARGET2

(percentages)



Source: ECB.

The trend in the value share continued from the year before and indicates a sustained growth in cross-border traffic, especially in the high-value segment (for more details, see Box 3 on “Cross-border payment networks”). This finding is also confirmed by developments in the money market, where the cross-border component increased compared with the previous year. On the other hand, the volume share of inter-Member State traffic in 2014 broke with the upward trend that TARGET2 has been witnessing since it began. This can be attributed to the decrease in TARGET2 volume in 2014, as a large portion of the customer payments that left TARGET2 after the migration to SEPA instruments was composed of cross-border payments. In any case, when looking

at this chart, it should be kept in mind that whether a payment is sent or received by a given banking community may have more to do with the bank’s internal organisation than the real geographical anchorage.

The inter-Member State payments shown in Chart 19 were identified based on the national banking communities of the sending and receiving direct participants on the platform. Since it is also possible to participate remotely in TARGET2 as an indirect participant, the evolution of the cross-border share in volume terms was also computed on the basis of the originator and beneficiary of the payment, taking into account the full payment chain information (i.e. originator, sending settlement bank, receiving settlement bank, beneficiary). When calculating the inter-Member State shares based on the originator and beneficiary of the payment, the share of cross-border payments in 2014 amounted to 32% in value and 50% in volume, both remaining unchanged from the previous year. Therefore, taking into account the full payment chain leads to a higher cross-border share in volume and a lower share in value, indicating that the average value of a cross-border payment when taking the originator and beneficiary into account is lower than the one taking only the sending and receiving direct participants into account.

### Box 3

#### Cross-border payment networks

It is essential for the TARGET2 operator to be aware of the degree of international financial connectedness in its system as such an awareness will allow for i) the measuring of the development of European financial integration, i.e. the level of cross-border payments among EU national banking communities; and ii) the identification of channels of contagion, i.e. whether and how a shock at the level of a national community may propagate throughout TARGET2 by reducing or stopping financial cross-border flows. Therefore, the structure as well as the degree of international connectedness is important to explore. This box provides empirical evidence on the existing bilateral payment flows in Europe using TARGET2 data.

#### Data and methodology

The dataset contains the daily value of bilateral financial payments which are transferred by national banking communities through TARGET2. It includes all EU Member States that are connected to TARGET2 (see Table A).

**Table A**

List of countries connected to TARGET2

AT	Austria	EU	ECB	LV	Latvia
BE	Belgium	FI	Finland	MT	Malta
BG	Bulgaria*	FR	France	NL	Netherlands
CY	Cyprus	GR	Greece	PL	Poland
DE	Germany	IE	Ireland	PT	Portugal
DK	Denmark	IT	Italy	RO	Romania**
EE	Estonia	LT	Lithuania	SI	Slovenia
ES	Spain	LU	Luxembourg	SK	Slovak Republic*

Notes: \*\* refers to the EU Member States that joined TARGET2 subsequent to its launch. The Slovak Republic, Bulgaria, and Romania joined in the years 2009, 2010, and 2011, respectively. This table also lists the European Central Bank (EU) as a participant, owing to the fact that the ancillary systems CLS (Continuous Linked Settlement), EURO1, STEP1 and STEP2 are settled on accounts at the ECB.

The sample runs from January 2009 to December 2014. The analysis investigates the structure as well as the time evolution of the cross-border financial network by applying complex-network analysis techniques.

For each day in the sample, a network is constructed where a **node** represents a country and a **link** between two countries is the average financial flow between them.<sup>14</sup>

The network statistics applied in the following are measures of *connectivity* (*degree* and *disparity*) and *centrality*. More specifically, the

statistics for connectivity provide information on how well countries are connected and whether the established links are of equal importance. The centrality statistics rank countries according to their importance in, and their influence on, the cross-border payment network.

#### Results

This section presents the evolution of the European financial payment network from 2009 to 2014 and provides empirical evidence on the connectivity and centrality.

<sup>14</sup> Since a link is represented by the average financial flow between two countries, the directions of flows are disregarded here. This assumption of symmetry simplifies the analysis but does not change the main message of this study, namely, to investigate Europe's financial integration over time. Furthermore, an index according to Fagiolo (2006, Directed or undirected? A new index to check for directionality of relations in socio-economic networks. Econ Bull 3: pp. 1-12) is applied, which favours the symmetry assumption.

(i) *Connectivity*

The network statistic “*degree*” counts the number of active financial links (ignoring the value of each link) relative to the number of possible links. Table B shows the metric for all countries connected to TARGET2 and further distinguishes three groups of countries.<sup>15</sup>

**Table B**  
Average degree of connectivity

	2009	2010	2011	2012	2013	2014
			<i>Degree</i>			
<b>All</b>	0.90	0.90	0.91	0.94	0.95	0.95
<b>Group 1</b>	0.96	0.96	0.96	0.96	0.96	0.97
<b>Group 2</b>	0.93	0.93	0.94	0.98	0.98	0.97
<b>Group 3</b>	0.79	0.80	0.83	0.89	0.91	0.92

Notes: The table shows the daily average degree of the network. 'All' includes the full set of European countries connected to TARGET2 (see Table 1); 'Group 1' includes Austria, Belgium, Germany, Denmark, ECB, Finland, France, Luxembourg and the Netherlands; 'Group 2' includes Cyprus, Spain, Greece, Ireland, Italy and Portugal; 'Group 3' includes Bulgaria, Estonia, Lithuania, Latvia, Malta, Poland, Romania, Slovenia and Slovakia.

First, the network of cross-border payment flows shows a high value for degree of connectivity. More than 90% of possible financial cross-border links are used on average in a given year. Furthermore, countries use more links over time since the average degree increases from 90% (2009) to 95% (2014).

Second, the countries in group 1 use in a given year more than 96% of their possible links to transfer money in Europe, i.e. each country in this group sends and receives money every day to and from all other European country that is connected to TARGET2. The situation is almost the same with the countries in group 2, which present values very close to group 1 when measuring degree of connectivity.

Third, the countries of group 3 are slightly less well connected compared with the group 1 countries. On average, roughly 79% of all possible financial cross-border links were used in 2009. However, over time the average degree increased up to 92%.

In sum, the findings suggest that most countries are well connected financially and that the relatively less well connected countries have made progress towards a fully connected network.

Table C provides information regarding the disparity between bilateral country relations in value terms. The metric “*disparity*” increases in line with the degree of dispersion, i.e. if the values of bilateral relations of a country are evenly distributed this measure is close to zero. The findings can be summarised as follows.

**Table C**  
Disparity

<b>All</b>	0.29	0.30	0.30	0.32	0.31	0.30
<b>Group 1</b>	0.23	0.24	0.23	0.26	0.26	0.25
<b>Group 2</b>	0.28	0.30	0.29	0.32	0.33	0.33
<b>Group 3</b>	0.38	0.38	0.37	0.38	0.34	0.33

Notes: The table shows the daily average disparity of the network.

<sup>15</sup> See the notes to Table B for details regarding the country groups.

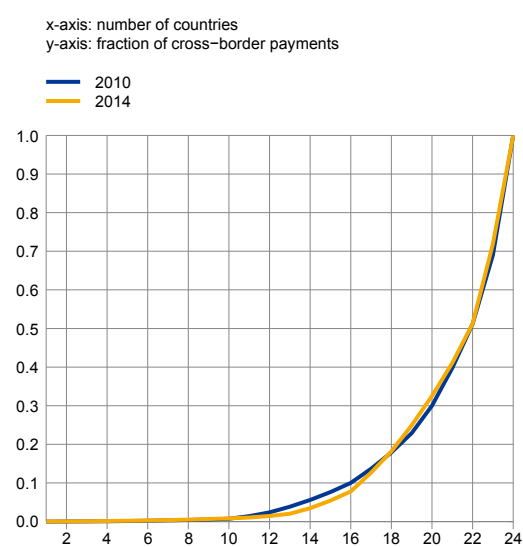


First, the “disparity” measure provides evidence that cross-border financial links are less evenly distributed across countries. Whereas the group 1 countries have a very low value of disparity, the group 2 and 3 countries have a significantly higher one, indicating that the group 2 and 3 countries have relatively few highly intensive bilateral relations.

Second, disparity is roughly stable over time, which may indicate established bilateral country relations, i.e. at the level of banks, their clients and financial market infrastructures.

(ii) *Centrality*

**Chart A**  
Fraction of Cross-Border Payments



Source: ECB.

To highlight the possible existence of a network “core group” that is responsible for a large share of cross-border payments, Chart A shows the fraction of cumulative cross-border payments as a function of the number of countries, sorted by their individual cross-border payment value in ascending order. This plot remarkably indicates that a large fraction of the cross-border payments value is accounted for by just a few countries. In detail, 18 countries have in total a share of 20% of the cross-border payments value; as the function becomes much steeper afterwards, the remaining six countries have roughly a share of 80%.

Furthermore, the network centrality statistics can identify the importance of each country/community in the network. In the following the metric “centrality” is applied to the daily network of cross-border payment flows, to measure the individual importance of a country. Table D reports the values of the centrality measure in descending order for the 10 most important countries. Germany and France have by far the most influence on the network of cross-border payment flows followed by the Netherlands, Belgium, Italy and Luxembourg. Furthermore, the ranking for the top three countries is stable over time. Comparing the measure of “centrality” for Germany with the values of the countries ranked below fifth place indicates the large gap between the countries and the rest.

**Table D**  
Centrality

Rank	Country	2010	Country	2014
1	Germany	0.62	Germany	0.59
2	France	0.50	France	0.52
3	The Netherlands	0.37	The Netherlands	0.34
4	Belgium	0.31	Italy	0.27
5	Italy	0.24	Belgium	0.26
6	Luxembourg	0.14	Luxembourg	0.21
7	Spain	0.12	Spain	0.17
8	Austria	0.07	Finland	0.07
9	Finland	0.06	Austria	0.05
10	Ireland	0.06	Denmark	0.05

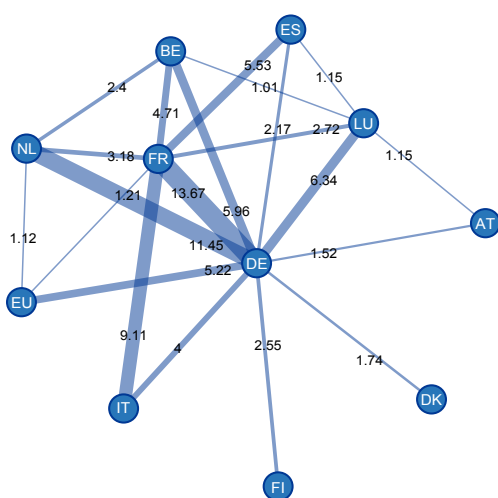
Notes: The table shows the daily average (eigenvector) centrality measure for the network.

**Table E**  
Most important cross-border links

Rank		2010		2014
1	DE-FR	14.94	DE-FR	13.67
2	DE-NL	11.54	DE-NL	11.45
3	BE-DE	8.65	FR-IT	9.11
4	FR-IT	6.74	DE-LU	6.34
5	DE-IT	5.06	BE-DE	5.96

Source: ECB.  
Notes: The table shows the gross flow between two countries as a percentage of the total cross-border value in TARGET2.

**Chart B**  
Visualisation



Source: ECB.

larger than 1%, which filters out most cross-border links. However, the partial network represents more than 80% of total cross-border payments.

To highlight the most important cross-border links Table E shows the gross flow between two countries relative to the total cross-border value in TARGET2. Hence, this ratio indicates which country pairs contribute most to the daily cross-border traffic. In 2010 and 2014, the financial link between Germany and France accounted for 14.94% and 13.67% of the total cross-border value, respectively. Moreover, the second most important bilateral link is that between Germany and the Netherlands, accounting for about 12%. The ranking for the two most relevant bilateral links did not change between 2010 and 2014. Furthermore, the table also reports the values for the bilateral links between Belgium and Germany, France and Italy, and Germany and Luxembourg, which have remained roughly stable over time.

(iii) *Visualisation*

Chart B visualises the cross-border payment network for the year 2014. The link width is equal to the sum of bilateral flows between two countries relative to the total cross-border value. For illustration purposes, the network only shows the bilateral links that have a share

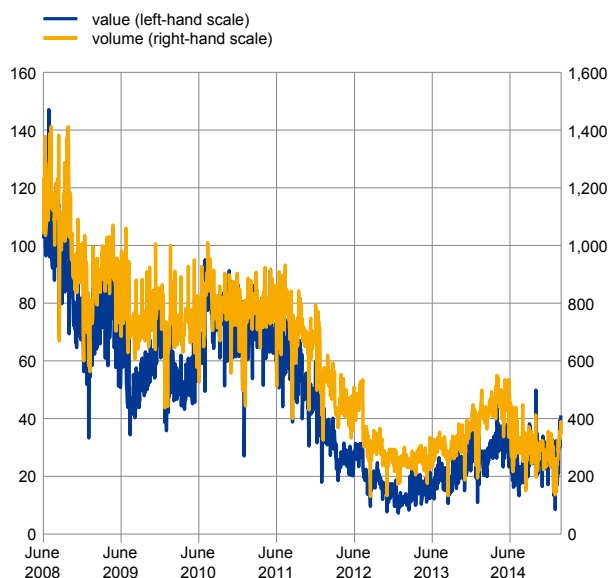
## 1.10 Money market transactions in TARGET2

Market participants use TARGET2 for settling unsecured money market transactions in central bank money. By applying the Furfine algorithm<sup>16</sup> it is possible to identify which TARGET2 transactions are related to money market loans, or, more precisely, to the unsecured overnight money market. This unique dataset is updated regularly to obtain the latest information about the money market. It is essential for analysing monetary policy implementation and is also of high relevance for TARGET2 operations given that the money market: i) represents

<sup>16</sup> For further information, see the TARGET Newsletter, issue number 6, December 2012, available at [http://www.ecb.europa.eu/paym/t2/shared/pdf/newsletter/Target\\_Newsletter\\_06.pdf?](http://www.ecb.europa.eu/paym/t2/shared/pdf/newsletter/Target_Newsletter_06.pdf?)

**Chart 20**  
Unsecured overnight money market in TARGET2

(daily totals; left-hand scale: EUR billions; right-hand scale: number of transactions)



Source: ECB.

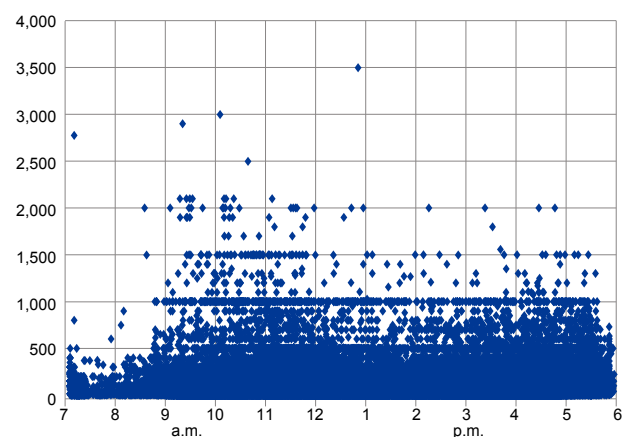
an important vehicle for the redistribution of liquidity among TARGET2 participants; and ii) is a large-value and time-critical area of business that the operator needs to be aware of, in particular when dealing with abnormal situations.

The dataset is developed using the TARGET2 simulator environment<sup>17</sup> and comprises data from June 2008 onwards. In 2014, 90,248 money market transactions with a total value of about €7 trillion euro were identified, which accounted for roughly 1% of all TARGET2 transactions in terms of value. This share is considerably lower than at the time TARGET2 completed its migration and is attributable to the global financial and economic crisis during the aftermath of the Lehman bankruptcy and, in particular, the sovereign debt crisis. Thereafter, during the last few years the turnover in the unsecured overnight money market stabilised at lower levels (see Chart 20).

The granularity of the dataset allows for an analysis of the times of day at which lending and repayment activities are carried out in TARGET2. Charts 21 & 22 reveal that in 2014 lending and repayment took place throughout the whole business day, albeit with certain peak times.

**Chart 21**  
Unsecured overnight money market in TARGET2 (2014): lending leg

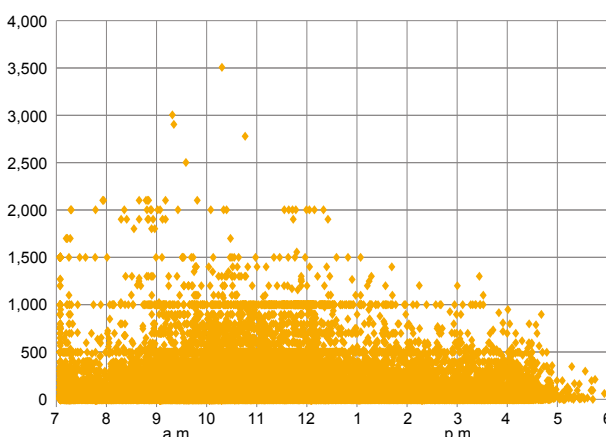
(value, EUR millions)



Source: ECB.

**Chart 22**  
Unsecured overnight money market in TARGET2 (2014): repayment leg

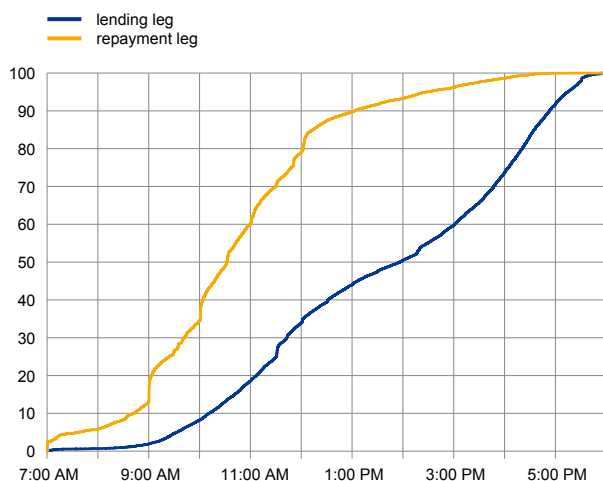
(value, EUR millions)



Source: ECB.

<sup>17</sup> See Box 2 in the TARGET Annual Report 2013, available at <http://www.ecb.europa.eu/pub/pdf/other/targetar2013en.pdf>

**Chart 23**  
Cumulative distribution of money market transactions across the day in 2014 (in value terms)



Source: ECB.

Chart 23 complements this analysis by showing the cumulative distribution in value of all money market transactions across the day in 2014. Regarding the lending leg, 50% of the total value is settled by 2 p.m., while 90% is settled by 5 p.m. This confirms the assumption that the last few hours of TARGET2 operations are particularly important for the interbank market. In terms of repayment, 40% of the loans are repaid by 10 a.m. and 90% by 1 p.m. These patterns ensure that the repaid liquidity can be reused for payment purposes later that day.

## 1.11 Shares of national banking communities

The two following charts break down the volume and the turnover of TARGET2 according to the share of the national banking communities contributing to its traffic.

For the sake of readability, only those countries representing more than 2% of overall TARGET2 turnover are shown.

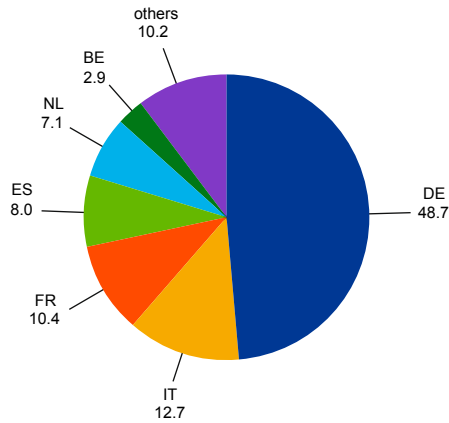
In terms of volume, in 2014, similarly to previous years, the largest contributor to TARGET2 traffic was Germany, which accounted for almost half of the transactions settled in the system. Adding Italy, France, Spain and the Netherlands, this figure increases to 86.9%, similarly to in previous years. The share of the German contribution slightly decreased compared with 2013 (-0.8%), whereas the Italian and French increased (+1.5% and +0.5% respectively). The contribution of the Dutch community to the volume decreased by 1.5 percentage points, bringing the Netherlands from the fourth to the fifth place. This change in the ranking and relative shares is mainly a consequence of the decrease in customer payments, which affected certain banking communities in particular. As regards turnover, the picture is again largely similar to the year before, with Germany accounting for slightly over 30% of the overall value, followed by France, Spain, the Netherlands and Italy. The top five countries by turnover generated 82.6% of the total value settled in TARGET2 in 2014. The concentration of turnover has remained stable over the years, with only a significant change in the Dutch share, which dropped by 2.1% compared with the previous year.

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. The higher rates in both cases can also be associated with 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.

**Chart 24**

Country contribution to TARGET2 volume

(percentages)

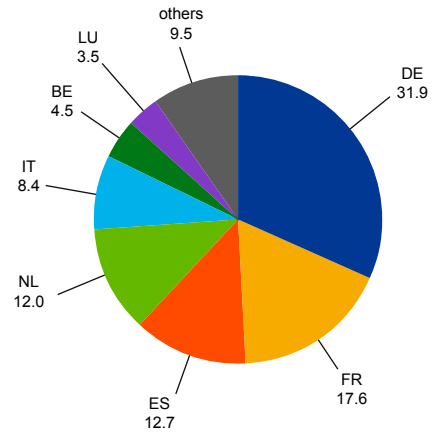


Source: ECB.

**Chart 25**

Country contribution to TARGET2 value

(percentages)



Source: ECB.

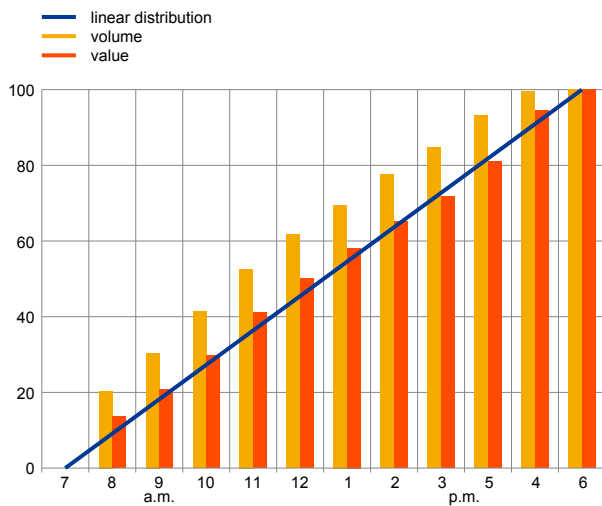
## 1.12 Pattern of intraday flows

Chart 24 shows the intraday distribution of TARGET2 traffic, i.e. the percentage of daily volumes and values processed at different times of the day in 2014.

**Chart 26**

Intraday distribution of TARGET2 traffic in 2014

(percentages)



Source: ECB.

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 the linear distribution to avoid liquidity and operational risk.

In value terms, the path is typically very close to a linear distribution, indicating an even spread throughout the day, which in turn ensures the smooth settlement of TARGET2 transactions. Such a regular distribution of settlement activities throughout the day, without any significant peaks, is a very important asset for the operator of TARGET2, as it means there is no concentration of risk at certain times of the day.

In volume terms, the curve is well above the linear distribution, with more than 20% of transactions being submitted to the system by one hour after the start of operations, which includes transactions sent during the night by participants and warehouse payments, and

41% by three hours after the start. By one hour before the system closes, 99.5% of the TARGET2 volume has already been processed. A comparison with previous years shows no significant deviations.

## 2 TARGET2 service level and availability

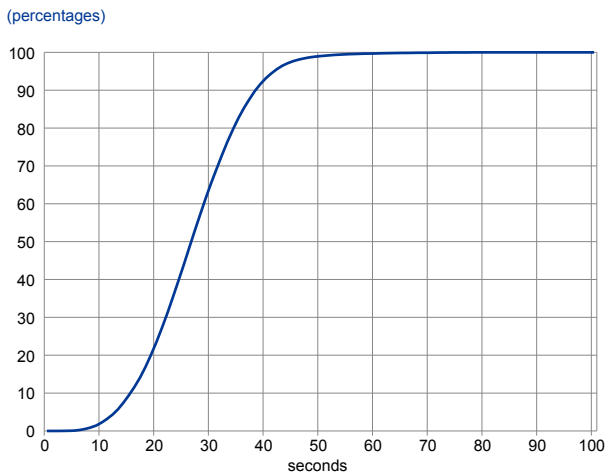
In 2014, 99.99% of the payments settled on the payment module of TARGET2 were processed in less than five minutes (100% in 2013). The remaining 0.01% of transactions needed a processing time of between five and fifteen minutes.

Compared with previous years, the figures remained high as regards delivery of the service and processing times of payments, confirming the high performance level of the SSP of TARGET2. It should be noted that such a good performance is very beneficial for the banking community, in particular when taking into account the real-time management of their liquidity.

The processing times of payments are measured for all the payments settled on the SSP. The calculation of the processing times covers all payments made to the payment module of the SSP, with the exception of ancillary system settlement transactions using the ASI, payments settled in the first hour of operations (see below on the “morning queue effect”) and payments that were not settled because of a lack of funds or breach of the limits. In practice, around 30% of all TARGET2 payments fall into these three categories of exceptions, meaning that the statistics on processing times apply to around 70% of the system’s traffic.

With regard to other requests or enquiries, 99.96%<sup>18</sup> (99.95% in 2013) were processed in less than one minute and only 0.04% (0.05% in 2013) in one to three minutes.

**Chart 27**  
Processing times on 30 June 2014, excluding first hour



Source: ECB.

Chart 27 helps to better quantify the system’s performance by providing the distribution of processing times on the SSP, i.e. the percentage of traffic with a processing time below a certain number of seconds. The reference point taken is the peak day of the year recorded by the SSP, 30 June 2014, when 568,060 payments were settled. The chart shows that, on this day, 50% of the transactions were settled within 27 seconds and 90% within 39 seconds, thereby confirming the system’s high performance level.

A specific phenomenon is worth reporting in the context of TARGET2 performance: the “morning queue effect”. When TARGET2 starts daylight operations at 7 a.m. CET, a very high number of transactions (about 20% of the daily volume on peak days) is already waiting for settlement, corresponding either to payments remitted by banks on previous days with a future value date (i.e. “warehoused payments”) or to payments

released by banks via SWIFT in the hours preceding the opening of the system. On peak days, more than 100,000 transactions may be processed in the first hour, which affects the average settlement time during this period. This huge volume of transactions normally takes around 30 to 45 minutes to be processed. In order to

<sup>18</sup> This figure covers the InterAct messages received by the SSP, both in U2A and A2A mode.

neutralise this effect, the first hour of operations is excluded when the TARGET2 processing times are calculated.

Specifically in the first hour, the use of urgency flags (“urgent” and “highly urgent”) is still highly recommended for payments considered as time-critical transactions (such as CLS). Using urgency flags circumvents settlement delays by using different queues (one queue for each type of priority). In addition, attention should be drawn to the possibilities offered in TARGET2 to reserve funds for highly urgent and urgent payments (see Section 1.7 of Chapter I on the use of prioritisation).

## 2.1 Technical availability

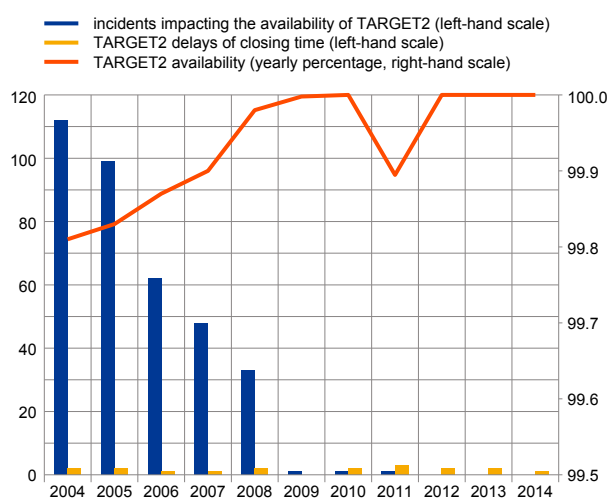
In the light of the importance of TARGET2 for the functioning of the financial system and the knock-on effects that any potential malfunctioning could have on other market infrastructures, the Eurosystem pays particular attention to ensuring the smooth operation of the system. This is clearly underlined by the fact that the SSP of TARGET2, as in the previous year, continued to achieve 100% of technical availability over the reporting period.

Technical availability is measured on TARGET2 business days, during the day trade phase (including the end-of-day processing) from Monday to Friday between 7 a.m. and 6.45 p.m. CET (7 p.m. on the last day of the minimum reserve period), including extensions required to complete the operational day (e.g. delayed closing owing to a technical problem in TARGET2 or to major problems in ancillary systems settling in TARGET2). The availability measurement does not include systems or networks not directly managed by TARGET2 (in particular, the availability of the SWIFTNet services). Incidents occurring during night-time settlement are not included either.

Technical availability is not intended to measure the impact of partial outages involving the SSP of TARGET2. For example, incidents only affecting the processing

of ancillary system transactions without any effect on other payment processing activities cannot be measured within this figure, although they do have an overall impact and are taken into account when assessing the system’s performance. However, such incidents are, where applicable, considered for the measurement of processing times and, in addition, are reported transparently and followed up accordingly.

**Chart 28**  
TARGET2 incidents and delays in closing



Source: ECB.

## 2.2 Incidents in TARGET2

The ECB publishes up-to-date information about the availability of TARGET2 via the TARGET2 Information System (T2IS), which is accessible via the financial information provider Reuters (page ECB46), as well as under the “Payments & Markets” section of the ECB’s website ([www.ecb.int/paym/t2/html/index.en.html](http://www.ecb.int/paym/t2/html/index.en.html))

and on the website [www.target2.eu](http://www.target2.eu). All incidents relating to TARGET2 are followed up with a detailed incident report and risk management process. The aim of this approach is to learn from these events in order to avoid a reoccurrence of the incidents or incidents of a similar nature and to improve monitoring capabilities.

It is worth mentioning two incident categories in particular, which may affect the availability indicator for TARGET2.

First, there were some incidents which, thanks to the technical set-up of the SSP, only partly affected the processing of transactions, without making the system totally unavailable. For that reason, they did not have any impact on the TARGET2 availability indicator. In 2014 the following incidents fitted into this category.

- On 10 March 2014, at around noon, the SSP faced a technical problem that led to slow processing of ancillary settlement files<sup>19</sup> which, in turn, caused a slowdown of the information and control module (ICM). As a side effect, the processing of the settlement of some ancillary systems' files was slightly delayed. Normal working conditions were resumed after around 40 minutes.
- On 22 May, also at around noon, an abnormal termination of two software programmes caused a settlement stoppage for some categories of payments. The problem was resolved after roughly 90 minutes.
- On 3 June in the morning, for around 90 minutes, the settlement of some queued ancillary system payments was interrupted.
- On 9 December, due to a configuration error, the ICM was unavailable from around 5 p.m. for around 90 minutes. While settlement activities were not affected, the ICM was unavailable and neither participants nor central banks had a business view of TARGET2-related information. As the incident occurred during a critical time of the business day on the last day of the maintenance period, the closing of TARGET2 was postponed by one hour to 7 p.m.

Second, although not included in the performance indicators, incidents during night-time settlement are reported transparently and followed up accordingly. In 2014 the following related incidents occurred:

- On 9 April, due to a failure of the database system, night-time settlement was interrupted at around 8.30 p.m., impacting the settlement of ancillary system files for around six hours.
- On 27 May, at 6.45 p.m. a programme in the payments module (PM) responsible for starting the new business day was abnormally terminated. As a consequence, the new business day could not be reached at the scheduled time (6.45 p.m.) and it was reached only at 8.30 p.m. As a consequence the settlement of ancillary system files started at 9.01 p.m.
- On 21 October, technical problems prevented the timely change of the business day. The new business day started only after 7 p.m. (instead of 6.45 p.m.).

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<sup>19</sup> Affecting ancillary system model 5 files only.



For all of these incidents, the root causes were identified and corrective measures have been implemented with the aim of preventing such interruptions from reoccurring.

## 3 TARGET2 participants

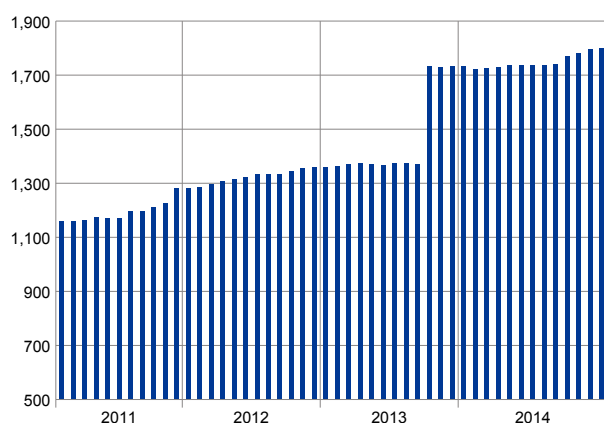
### 3.1 RTGS accounts

The number of RTGS accounts opened in TARGET2 (encompassing the direct participants, the technical accounts, the ancillary system accounts and the special-purpose accounts) has continued to increase. In total, 69 new RTGS accounts were opened in 2014 and by the end of the year the total number of RTGS accounts in TARGET2 was 1,802.

#### Internet-based participation

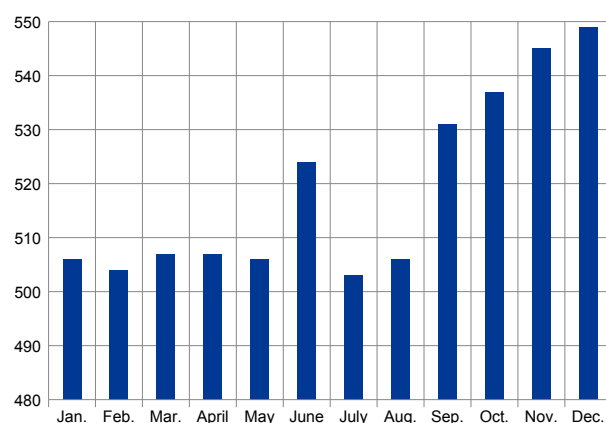
In November 2010 internet-based participation was introduced to allow small banks to obtain a direct connection to TARGET2 without necessarily being connected to the SWIFT network. The service, which is subject to a monthly fee of €70, is mainly designed for low-volume participants that are interested in holding an account directly with their central bank; either an RTGS account or a home accounting module (HAM) account (provided the respective central bank opted for this module). While the initial number of internet-based participants was relatively modest (68 at the end of 2012), it increased significantly in 2013 (reaching 509 participants at the end of 2013) with the phasing out of the last proprietary home accounts still offering payment settlement services. In December 2014 the overall number of internet-based participants reached 549.

**Chart 29**  
Number of RTGS accounts in TARGET2



Source: ECB.

**Chart 30**  
Internet-based participants in 2014



Source: ECB.

#### **Box 4**

##### **New criteria for the identification of critical participants**

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To comply with oversight recommendations, the TARGET2 operator developed a framework for identifying and monitoring the resilience of its critical participants. This framework was established to identify participants which, if they were to encounter a technical outage in their connection to TARGET2, could be the source of systemic risk. In view of their systemic importance, critical participants are subject to higher business continuity, contingency and test requirements. This is applicable to both banks and ancillary systems. Identifying which institutions are critical is therefore of great importance.

While the identification of critical ancillary systems has been mainly based on their systemic importance according to the classification given by overseers, up to now critical banks have been selected on the basis of quantitative criteria, namely the turnover they generate in TARGET2. Previously, any credit institution that settled more than 2% of the system's turnover was considered critical. Furthermore, banks with a lower turnover were added to the list of critical participants up until the accumulated market share of all critical credit institutions reached 25% of the average TARGET2 turnover. In addition, national central banks could make requests to reclassify participants as "critical" on the grounds of national specificities.

In 2013 and 2014 a study was carried out to investigate whether different or additional criteria could be used to identify critical banks in TARGET2. The study was conducted using the TARGET2 simulator (see Box 2 in the TARGET Annual Report 2013) and aimed to assess the systemic relevance of a bank participating in TARGET2 based on the impact that its technical failure or unavailability would have at system level. The analysis was undertaken for the top 34 TARGET2 banks by turnover, equal to roughly twice the number of participants identified as critical in the previous year.

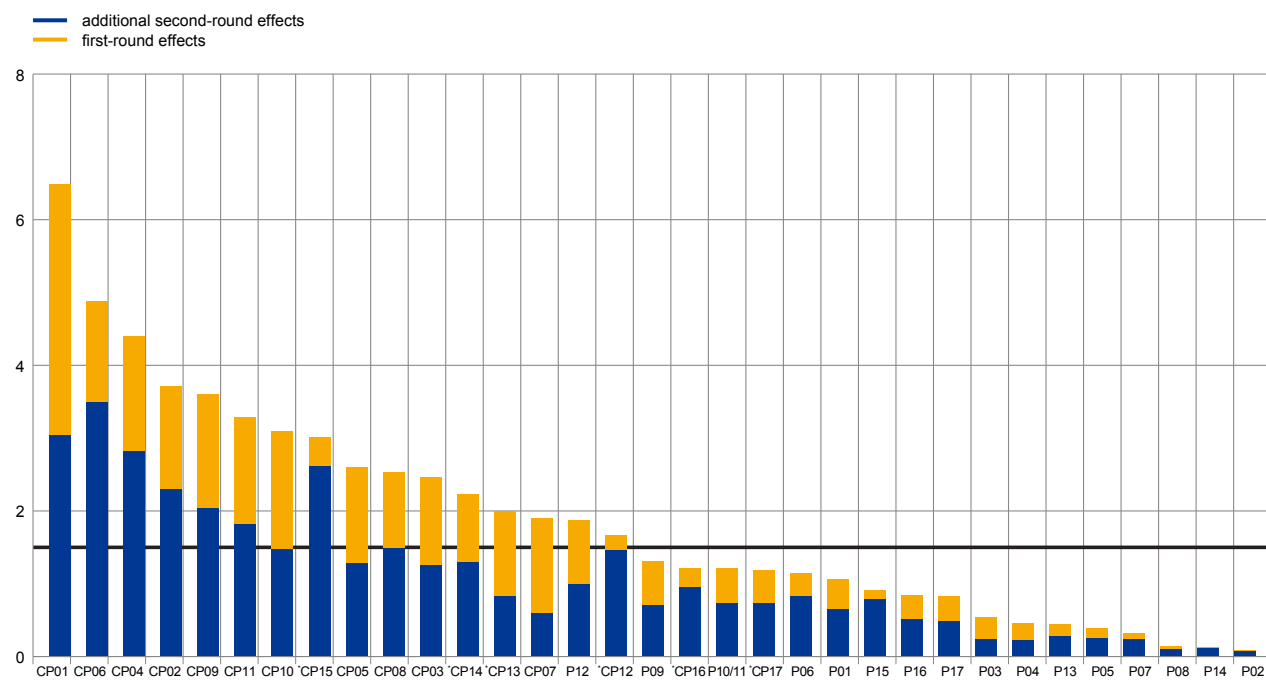
Methodologically, a technical failure was implemented in the study as follows. For each simulation, one of the 34 participants was considered to be no longer able to send payments to TARGET2, though it could still receive payments. The unavailability was defined to last one full business day. As the assumption was a problem of a technical nature – i.e. not a financial default of the bank – all the ancillary system payments credited and debited in the account of that bank and sent automatically by the ancillary system itself were still assumed to take place. The existence of shared technical platforms serving multiple participants was taken into account. Finally, no change in the behaviour of other banks was assumed because of the complexity of simulating such a scenario. A representative sample of two weeks was selected, which resulted in ten single days of simulated technical failures for each bank.

The systemic criticality of the sample banks was assessed by calculating the amount of unsettled payments, both in terms of value and volume, resulting from the simulated failure. As shown in the chart, the share of unsettled transactions is expressed as a combination of first- and second-round effects. The first-round effects indicate the transactions not sent because of technical failure and the second-round effects indicate the additional transactions which were sent by other participants, but still ended up not being settled because of missing incoming liquidity.

## Chart

### Share of unsettled transactions

(in value)



Source: ECB.

The analysis predominately focused on the value rather than volume as it constitutes a more accurate indicator of a participant's systemic relevance. In the chart, the banks identified at the time of the study as critical participants are indicated with the letters "CP", while the remaining candidate banks in the sample are marked only with "P". The asterisk indicates those critical participants which were reclassified by their respective central bank.

One of the most important findings is that the ranking of participants by severity of the cumulated effect of their technical failure largely confirms that those participants identified as critical in previous years are indeed the ones yielding a higher share of unsettled transactions on average, with only a few exceptions. This finding suggests that the current criteria used to identify critical banks are appropriate. The ranking in terms of the average share of unsettled transactions does not necessarily coincide with the ranking in terms of the share of turnover generated by the banks in TARGET2, showing that this indicator could potentially provide an even better proxy for indicating how systemic a participant is in TARGET2.

Another important element is that the choice to reclassify some participants on the basis of national specificities was justified. This is particularly the case for participants that do not yield a high level of first-round effects, meaning they are not among the top institutions in terms of turnover generated. However, the share of second-round effects for these participants is very high, indicating that they act as distributors of liquidity in the system for other institutions. In the light of their systemic relevance, the results of this study strongly support the ex post classification of such institutions as critical participants.

The results of the study confirm that the level of unsettled payments derived from a simulated technical failure is a valid additional criterion that can be used to identify critical participants. It was therefore decided to use it as a complement to the turnover criteria, which still remains the main identification criterion,<sup>20</sup> and to use it to assess the reclassification requests proposed at national level. To this end, a threshold was defined: those banks for which a technical failure leads, on average, to more than 1.5%<sup>21</sup> of unsettled payments system wide, i.e. the sum of first-round and second-round effects, should be classified as critical.

This revision to the criteria became effective in April 2014 when the yearly exercise for the identification of critical participants was launched. The Information Guide for TARGET2 users, where these provisions are laid down, was updated accordingly.

In the new exercise, a group of 20 banks were classified as critical in 2014.

## 3.2 Participation types

At the end of December 2014, 1,007 direct participants held an account on the SSP of TARGET2 and were registered as such in the TARGET2 directory. Through these direct participants, 837 indirect participants from the European Economic Area (EEA) could settle their transactions in TARGET2, as well as 5,037 correspondents worldwide.

Including the branches of direct and indirect participants, a total of 56,276 credit institutions around the world were accessible via TARGET2 at the end of 2014. These numbers are largely comparable with the ones of 2013.

Participants and institutions addressable via TARGET2 are listed in the TARGET2 directory, which is available to all direct participants for information and routing purposes. Besides the direct participants that hold an RTGS account for sending payments to and receiving payments from all other direct participants, a number of banks have opted for the opening of special-purpose RTGS accounts, which are

**Table 2**  
Participation types

Direct participation	1,007
Indirect participation	837
Multi-addressee – credit institution	33
Multi-addressee – branch of direct participant	1,572
Addressable BIC – correspondent (including central bank customers)	5,037
Addressable BIC – branch of direct participant or entity that is part of the same group	33,233
Addressable BIC – branch of indirect participant or entity that is part of the same group	3,813
Addressable BIC – branch of correspondent or entity that is part of the same group	10,744

<sup>20</sup> In the context of the revision of criteria for identifying critical participants, this criterion was also simplified. Those banks that accounted for at least 1% of total turnover during the first quarter of the year are automatically identified as critical; the threshold on cumulative turnover will no longer be applied.

<sup>21</sup> The vertical line in the chart indicates this newly defined threshold.

not reported as direct participants in the TARGET2 directory. These special-purpose accounts are used, for instance, to fulfil reserve obligations in countries where reserves are computed on RTGS accounts. There were 641 of these accounts, also called “unpublished BICs”, at the end of 2014 (572 in 2013).

**Table 3**  
ASI settlement model

	Usage <sup>1)</sup>
Model 1 – Liquidity transfer	4
Model 2 – Real-time settlement	19
Model 3 – Bilateral settlement	21
Model 4 – Standard multilateral settlement	22
Model 5 – Simultaneous multilateral settlement	14
Model 6 – Dedicated liquidity	21

1) The total number of times the models were used is higher than the total number of ancillary systems that opted for the ASI because an ancillary system may make use of more than one model.

### 3.3 Ancillary systems

At the end of 2014 a total of 84 ancillary systems were settling on the TARGET2 SSP, including 35 retail payment systems/clearing houses, 32 securities settlement systems and six central counterparties. This is a slight increase compared with 2013 (when there were 83 ancillary systems in total).

Of the 84 ancillary systems settling on the SSP, 63 were making use of the Ancillary System Interface (ASI), a feature which was developed to facilitate and harmonise the cash settlement of these systems in

TARGET2. The number of times each of the six available ASI models is used is shown in Table 3.

## 4 TARGET2 revenues

### 4.1 Analysis of the revenues collected

The pricing policy for TARGET2 entered into force after the migration of the last wave of countries on 19 May 2008. From that date onwards, participants have been billed on a monthly basis based on the single pricing structure, which applies to payment transactions initiated on the SSP. Based on 2014 figures, the following observations can be made.

- 93% of the direct participants in the SSP opted for the flat fee option (i.e. option A), while 7% opted for the digressive fee option (i.e. option B).<sup>22</sup> This illustrates that TARGET2 is still capable of attracting both the major players in the euro area as well as a large number of small and medium-sized institutions.
- The participants opting for pricing option B generate, in total, around 88% of the traffic on the SSP and almost 80% of TARGET2 revenues.<sup>23</sup> As a result of this concentration effect, 31% of all SSP transactions were priced at the lowest pricing band, i.e. €0.125. This demonstrates that key participants, particularly

<sup>22</sup> Option A (i.e. a monthly fee of €150 and a flat transaction fee of €0.80) is intended for small and medium-sized institutions submitting less than 8,625 TARGET2 transactions per month. For institutions making greater use of TARGET2, option B (i.e. a monthly fee of €1,875 and a digressive transaction fee of between €0.60 and €0.125) is proposed.

<sup>23</sup> These are accounted for by core pricing participants, central banks using ASIs for “other purposes”, ancillary systems and liquidity pooling.

multi-country banks, benefited from the attractive digressive fee option offered by TARGET2 and from the competitive group pricing offers.<sup>24</sup>

- Transactions exchanged between credit institutions generate around 85% of TARGET2 volumes, with the remaining 15% attributable to ancillary system transactions.
- 79% of TARGET2 revenues were variable, i.e. came from transaction fees, while fixed subscription fees accounted for 21%.

## 4.2 Cost recovery objectives

The objective initially set by the Governing Council of the ECB in 2007 was that TARGET2 should recover all of its costs (with the exception of the “public good factor”) over the six-year amortisation period, i.e. between May 2008 and April 2014. This covers the development costs, running costs, overhead costs and capital costs.

At the time of the development of TARGET2, a number of assumptions were made regarding the volume of operations when considering the recovery of the costs of TARGET2. It was estimated that in the first year of TARGET2 operations (i.e. from May 2008 to April 2009), TARGET2 would have to settle a total of 93.05 million transactions and that this figure would then have to increase by an average of 6% per year. While the objective was met in the year the system was launched, the overall economic slowdown and exceptional market conditions in the following years made it impossible to meet the targeted 6% increase. Indeed, since the launch of TARGET2, the system has even seen an average annual decrease in traffic of 1.3%.

Against this background, the Eurosystem decided to amend the single pricing scheme of TARGET2 as of January 2013. The changes brought to the pricing scheme increased the fixed users’ periodic fee, while the transaction fees remained unchanged. The new pricing scheme represents an acceptable compromise, with a limited increase in the participants’ fees and a reasonable extension of the system’s payback period. At the end of this payback period, or at an earlier point in time if market conditions requires, the Eurosystem will carefully reconsider the single pricing scheme of TARGET2.

## 5 TARGET2 risk management and oversight activities

### 5.1 TARGET2 risk management

Managing information security risks is a key element of the governance structure of TARGET2. To meet this responsibility, the Eurosystem has established a comprehensive risk management<sup>25</sup> framework comprising, among other things,

<sup>24</sup> Some specific features of TARGET2 (e.g. liquidity pooling or multi-addressee access) offer the possibility of applying the digressive transaction fee to all payments initiated from accounts belonging to the same group.

<sup>25</sup> In the context of this section, risk management concerns information security issues. It does not cover the management of financial risks (i.e. credit and market risks).

a fact-finding analytical part, as well as dynamic elements, to ensure that information security is continuously monitored and maintained throughout the lifecycle of TARGET2.

In particular, TARGET2's risk management processes aim to: (i) monitor developments to ensure that progress on the implementation of security controls in response to issues resulting from risk assessments is satisfactory; (ii) enable those involved to learn from operational experience and thereby ensure that appropriate measures are taken to prevent an incident from reoccurring; and (iii) proactively identify new threats and vulnerabilities that could occasionally emerge from the changing environment in which the TARGET2 system operates and, if needed, initiate deliberations regarding the implementation of additional security controls to prevent these threats from materialising.

To create awareness of any potential security problems, updated information obtained from the risk management processes is reported on a regular basis. Furthermore, the progress made on the implementation of mitigating measures listed in the action plans is monitored to ensure that satisfactory progress is being made.

In conclusion, the consistent use of the TARGET2 risk management framework reassures the Eurosystem, as well as TARGET2 users, that overall security in TARGET2 is kept at a satisfactory level. In this context, it is worth mentioning that incidents which occurred in 2014 were reported and resolved, their root causes were addressed, and they did not affect the security and operational reliability of TARGET2.

## 5.2 Oversight activities

The regular oversight activities of TARGET2 in 2014 included the monitoring of the system's operational performance as well as relevant business developments, the follow-up to incidents, and the assessment of changes in the system.

A major part of the oversight activities in 2014 were related to reviewing the operator's measures aimed at addressing the recommendations and findings from the assessment of TARGET2 against the CPSS-IOSCO Principles for Financial Market Infrastructures (CPSS-IOSCO PFMIs). The TARGET2 operator's analysis of tiering arrangements in TARGET2 was assessed. In addition, discussions with the operator took place about the envisaged measures to meet the recommendations made by the overseers, for example concerning the establishment of a comprehensive risk management framework and a recovery plan.

Furthermore, the overseers started the assessment of the impact that the connection between TARGET2 and T2S will have on TARGET2's compliance with the CPSS-IOSCO PFMIs. The connection of T2S to TARGET2 constitutes the most significant change since the inception of TARGET2.

In August 2014 the ECB regulation on oversight requirements for systemically important payment systems (SIPS Regulation) entered into force. The requirements defined in the regulation seek to ensure the efficient management of legal, credit,

liquidity, operational, general business, custody, investment and other risks, as well as sound governance arrangements. These requirements are proportionate to the specific risks to which such systems are exposed and are stricter than previous oversight standards. TARGET2 was identified as one of the key payment systems that fall under the Regulation. For systems to be identified as SIPS they need to fulfil at least two of four main criteria, i.e. relating to the value of payments settled, market share, cross-border relevance and provision of services to other infrastructures.

## 6 System evolution

### Adaptations to TARGET2-Securities

The SSP release 7.0 was mainly dedicated to the preparation of the SSP for T2S (for further details on the connection of T2S to TARGET2, see “TARGET Annual Report 2013” and box 5 below). This time the go-live date of the release was organised in two steps. With the first step in November 2013, the new interface for T2S was technically implemented, but the corresponding features were kept dormant and their activation date will be the same as the go-live date of T2S, i.e. 22 June 2015.

### Migration to ISO 20022

The ISO 20022 strategy for TARGET2 was announced by the Eurosystem at the Sibos event in October 2012. All SWIFT FIN MT standards currently used in TARGET2 for payment purposes will be replaced by their MX equivalent in November 2017. There will be no coexistence between the “old” MT and “new” MX standards. The content of the MX equivalent messages will ensure complete interoperability (content-wise) with the legacy standards, following a like-for-like approach. In March 2015 the Eurosystem announced that the migration of TARGET2 to ISO 20022 will, for the time being, rely on a converter. The converter-based solution will leave the core RTGS features unchanged, including the ICM, thus limiting costs and making the ISO 20022 implementation possible as part of release 11.0 in November 2017. A fully-fledged implementation of the ISO 20022 standards will nevertheless be envisaged in the context of a review of the Eurosystem market infrastructure, which is about to be launched.

### Review of the Eurosystem Market Infrastructures

While the present TARGET2 system is still satisfactory to all stakeholders, it ought to be acknowledged that TARGET2 was designed more than ten years ago and has already been in operation for seven years. For this reason, and in conjunction with the launch of TARGET2-Securities (T2S), the Eurosystem deems it necessary to initiate a reflection on possible enhancements to its RTGS system and more broadly on the provision of market infrastructure services to the market. This review is seen as a sound practice, with the aim of ensuring that the Eurosystem continues to adequately support the European banking community and financial markets in a changing environment. The Eurosystem aims to progressively implement these



enhancements, according to a timetable, which still has to be discussed with the market. The intention is to deliver the first concrete elements of this strategy before the end of this decade. Further information on this initiative as well as the modalities of the participation of the industry will be provided in due course.

## Box 5

### Getting ready for T2S

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TARGET2-Securities (T2S) is the future pan-European platform for securities settlement in central bank money. It will gather both securities and cash accounts in a single technical platform, the T2S platform.

Although the mentioned accounts will be centralised on a single platform, the legal and business relationships between the holders of the securities and cash accounts will remain with the central securities depositories (CSDs) and national central banks (NCBs) joining T2S.

The cash accounts, called dedicated cash accounts (DCAs), will be used exclusively for the settlement of securities in T2S and will be linked to the accounts held in the RTGS systems of the central banks that decided to make their currency available for settlement in T2S.

The euro will be the first currency available for settlement in T2S and, therefore, T2S and TARGET2 will be closely inter-related in view of the euro liquidity management. In this context, recent years have been marked by the preparation of the connection between TARGET2 and T2S, not only from a technical perspective, but also from a legal and operational perspective. In addition, testing and migration aspects were also the focus of attention.

From a technical perspective, the main highpoint was the implementation of the TARGET2-Securities Interface (T2SI) in TARGET2, which will enter into operation with the go-live of T2S, i.e. on 22 June 2015. In order to enable liquidity management between the euro DCAs and the PM<sup>26</sup> accounts in the SSP, T2SI will offer some core functionalities, which will be available to all PM account holders. Some further functionalities will also be offered, aiming at facilitating the management of liquidity for those DCA holders that do not wish to connect directly to the T2S platform. These additional functionalities will only be available to the PM account holders opting for the TARGET2 value-added services for T2S<sup>27</sup>.

From a legal perspective, the euro DCAs fall within the remit of TARGET2 and will be regulated like PM accounts (*mutatis mutandis*). Thus, the rights and obligations of DCA holders will be similar to those of the PM account holders, as reflected in the amending Guideline on TARGET2, which will enter into force also on 22 June 2015. This will allow the TARGET2 central banks to ensure a level playing field among participants, in particular DCA holders, by providing them with harmonised conditions for the opening and operation of euro DCAs, as well as a harmonised pricing scheme.

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<sup>26</sup> The term "PM accounts" stands for Payment Module accounts and designates the standard RTGS accounts of participants on which their payments are booked.

<sup>27</sup> For further information on the features offered by the value-added services of TARGET2, please refer to the TARGET Annual Report 2013.

In order to prepare for connection to T2S, the TARGET2 operational framework has also undergone major changes since the TARGET2 go-live. Indeed, while keeping the procedures well established during recent years, some new procedures were introduced and others adjusted, in order to ensure that the TARGET2 central banks will be able to continue to maintain the level of excellence as regards cooperation among themselves and in their support to participants. The main changes are related to:

- (i) the reorganisation of the existing service desks, which need to cope with new functions and with the introduction of new actors like the T2S Service Desk and the T2S coordination function;
- (ii) the coexistence of two operational day schedules: the SSP day schedule, applicable to PM account holders and ancillary systems – the “existing” users – and the T2S schedule, applicable to the DCA holders – the “new” users;
- (iii) the increased relevance of night-time settlement as well as of the several cut-offs occurring between 4 p.m. and 6 p.m.;
- (iv) the need to register DCA holders and to invoice the services used by them, which triggered the development of dedicated registration forms and changes to the billing processes and applications;
- (v) the introduction of new potential disruptions, namely the T2S platform and the T2SI and, hence, the need to develop procedures to deal with the abnormal situations that might emerge.

In order to give all users a better understanding of the overall interaction between TARGET2 and the T2S platform and to enable them to make use of both platforms as efficiently as possible, all changes to the TARGET2 operational framework have been included in the Information Guide for TARGET2 Users, which was published in mid-April 2015. Additionally, dedicated workshops will also be organised by the Eurosystem and by the national central banks before the launch of T2S.

Finally, the preparatory work also encompassed the testing and migration aspects. As regards testing, the Guide to TARGET2 User Testing was updated and new certification and authorisation test cases were developed, with the aim of guaranteeing that DCA holders can connect properly to the T2S platform and can make use of the functionalities offered either by the T2S platform or by the T2SI in an effective way. Concerning migration, it was also ensured that all the different steps needed for a successful migration to T2S will be sufficiently tested in advance and an appropriate timeline was put in place.

Further details on the preparations for connection to T2S from a TARGET2 perspective are available on the TARGET2 website ([www.target2.eu](http://www.target2.eu)).

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# Chapter 2

## The TARGET2 system

### 1 From the first-generation TARGET system to TARGET2

#### 1.1 The first-generation TARGET system

With the establishment of the monetary union in 1999, it became crucial to develop a payment service for the purposes of the future single monetary policy and which would facilitate the circulation of the new currency between the Member States in a fast and reliable manner. At that time, the majority of Member States already had their own RTGS systems, which were, however, limited to the settlement of transactions in their national currencies. Given the need to be ready in time for the introduction of the new currency, the TARGET system was originally built by linking together the different RTGS structures that existed nationally and defining a minimum set of harmonised features, allowing for the sending and receiving of payments across national borders (i.e. inter-Member State payments).

TARGET, the first-generation RTGS system for the euro, commenced operations on 4 January 1999 following the launch of the euro. It had a decentralised technical structure, consisting of 17 national RTGS systems and the ECB payment mechanism, and was available for credit transfers in the countries that had adopted the euro as their currency.

Similarly to TARGET2, TARGET offered such features as unlimited (collateralised) intraday credit free of interest, immediate finality, and high-speed processing of transactions, thus facilitating participants' cash management. In principle, TARGET was originally intended for the processing of large-value payments in euro, especially payments related to monetary policy operations involving the Eurosystem or the settlement of systemically important payment and settlement systems. However, it soon became widely used for other types of transaction, including commercial payments.

After its inception in 1999 TARGET became a benchmark for the processing of euro payments in terms of speed, reliability, opening times and service level. It also contributed to the integration of financial markets in Europe. Moreover, the establishment of TARGET supported the rapid integration of the euro area money markets by providing its users with a common payment and settlement infrastructure.

#### 1.2 From TARGET to TARGET2

Over its years of operation, TARGET successfully met its main objectives: it supported the implementation of the single monetary policy, contributed to reducing systemic risk and helped banks to manage their euro liquidity at national and cross-border level.

However, TARGET also presented some shortcomings, which were largely attributable to its decentralised structure and which called for a redesign of the system. Market participants increasingly indicated a need for an enhanced, harmonised service, which could be offered at the same price across the EU.<sup>28</sup> Furthermore, the cost-efficiency of the system was problematic for the Eurosystem, as the revenues generated by TARGET did not cover a sufficient proportion of its costs. Finally, in the context of anticipated EU enlargement, the new Member States that were expected to connect to the system would considerably increase the number of TARGET components.

In order to meet these challenges, in October 2002 the Governing Council of the ECB defined the principles and structure of TARGET2 – the next-generation TARGET system, which would offer harmonised core services on a single technical platform and which would be priced according to a single price structure. As a result of the new approach, the Eurosystem envisaged lower costs, which, together with the investment costs, would be recovered via the system's fees<sup>29</sup>. The Governing Council acknowledged that, despite the technical consolidation of TARGET2, the decentralised nature of the relationships that the NCBs had with the counterparties in their respective countries would be preserved, including those relating to monetary policy functions.

TARGET2 was successfully launched in November 2007 and the decentralised structure of the first-generation TARGET system was progressively replaced by a single technical platform, the "Single Shared Platform" (SSP). Three Eurosystem central banks – the Banca d'Italia, the Banque de France and the Deutsche Bundesbank – jointly provided the SSP for TARGET2, and they operate it on behalf of the Eurosystem. The migration to the new platform took place in three waves. The first group of countries (Austria, Cyprus, Germany, Latvia, Lithuania, Luxembourg, Malta and Slovenia) migrated in November 2007, followed by the second migration group (Belgium, Finland, France, Ireland, the Netherlands, Portugal and Spain) in February 2008, and the third in May 2008 (Denmark, Estonia, Greece, Italy, Poland and the ECB component).

### 1.3 Harmonised services

As a result of the move from a decentralised multi-platform system to a technically integrated platform, TARGET2 can offer harmonised services at EU level, ensuring a level playing field for banks across Europe. A single price structure applies to both domestic and cross-border transactions. Moreover, TARGET2 provides a harmonised set of cash settlement services in central bank money for all kinds of ancillary system, such as retail payment systems, money market systems, clearing houses and securities settlement systems. Currently there are 83 ancillary systems

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<sup>28</sup> While inter-Member State payments were subject to degressive transaction fees (from €1.75 down to €0.80), intra-Member State transaction fees were not harmonised and were fixed by individual central banks.

<sup>29</sup> In this context, owing to the special role of TARGET2, a "public good" factor corresponding to the positive externalities generated by TARGET2 (e.g. in terms of the reduction of systemic risk) was defined, for which costs would not have to be recovered.

settling in TARGET2. All of them are able to access any account in TARGET2 via a standardised interface. While before the launch of TARGET2 each ancillary system had its own procedure for settlement, now the system offers six generic procedures designed for ancillary systems (two real-time and four batch procedures), thereby allowing the substantial harmonisation of business practices.

For its participants TARGET2 offers specific liquidity management features that allow banks, in particular multi-country banks, to further consolidate their internal processes, such as treasury and back office functions, and to better integrate their euro liquidity management. For example, participants are able to group some of their accounts and pool the available intraday liquidity for the benefit of all the members of the group. In addition, for a group of accounts it is possible to benefit from a special TARGET2 group pricing scheme, i.e. a degressive transaction fee, which applies to all of the group's payments as if they were sent from one account. TARGET2 participants can also make use of liquidity-saving features to optimise the liquidity requirements of the system, such as payment queues, gridlock resolution mechanisms and priorities and reservation.

The TARGET2 system also provides its participants with further tools to streamline their payment and liquidity management in euro. Today, managers of cash and collateral wish to have automated processes to optimise payment and liquidity management, as well as appropriate tools to monitor their activities and facilitate accurate funding decisions, preferably with the possibility of managing all of their central bank money flows from a single location.

More details on the features and functionalities of TARGET2 can be found in Annex 1 ("Features and functionalities of TARGET2").

## 2 System rules

### 2.1 Specifications

The TARGET2 General Functional Specifications (GFS), made available to the user community in June 2007, provide a high-level overview of the SSP for TARGET2 and a description of its functions. While the GFS is provided for informational purposes for users, a more detailed and updated explanation of the SSP is available in the User Detailed Functional Specifications (UDFS). The UDFS provides information on the core services (Book 1) and the optional services (Book 2) offered by the SSP, as well as on XML messages (Book 4). The latest version of books 1, 2 and 4 of the UDFS (i.e. version 8.1) was made available to the user community in December 2014.

The User Handbook for the information and control module of the SSP describes the module's online information tools and control measures, which allow access to the other relevant modules of the SSP. The latest version of the User Handbook (version 8.0) was made available to the user community in September 2014.

## 2.2 TARGET2 Guideline

In June 2007 the Eurosystem adopted the Guideline on TARGET2, which repealed the guideline governing the operation of the first-generation TARGET system. Since 2007 the TARGET2 Guideline has been regularly updated to take into account technical changes in TARGET2 and changes in EU legislation, as well as to ensure clarity. In 2012 the decision was taken to “recast” the Guideline, i.e. to produce a consolidated version incorporating all the changes made since 2007. In addition to this consolidation, it was decided, in the interests of transparency, to incorporate articles which had previously been viewed as solely internal to the Eurosystem, and which had been included in a “non-public Guideline on TARGET2”. These articles include, among other things, the legal basis for the inter-NCB balances in TARGET2. With the inclusion of these articles in the public Guideline, the non-public Guideline has also been repealed and not replaced. The new Guideline on TARGET2 was adopted on 5 December 2012.

TARGET2 is legally structured as a multiplicity of payment systems and is governed by the Guideline on TARGET2, which spells out, among other things, the TARGET2 governance arrangements and audit rules. Annexes to the TARGET2 Guideline form the basis on which the ECB and the NCBs set the terms and conditions for their individual TARGET2 component systems, according to the legislation applicable to them. The annexes set out the basis for participation in TARGET2 (Annex II) and for access to intraday credit (Annex III), including the rights and obligations of the participants. In particular, Article 39(1) of Annex II requires that TARGET2 participants comply with the legislation applicable to them on – among other things – prevention of money laundering. Material breach by a participant of the conditions for participation in TARGET2 may lead to suspension or termination of their participation in the system.

## 3 Participation of non-euro area central banks

On 24 October 2002 the Governing Council of the ECB decided that, after joining the EU, the NCBs of the new Member States would be given the same rights and obligations with regard to TARGET connection as the non-euro area NCBs already participating in the system.<sup>30</sup> Different technical options for such connections, including variants avoiding the need for separate euro RTGS platforms, were developed and presented to the NCBs of the new Member States on a “no compulsion, no prohibition” basis. Only when new Member States join the euro area does connection to TARGET become mandatory, as its use is mandatory for the settlement of any euro operations involving the Eurosystem.

For NCBs which have not yet adopted the euro, participation in TARGET2 is optional and facilitates the settlement of euro-denominated transactions in these countries. In the course of the development of TARGET2, 21 of the 28 central banks comprising the European System of Central Banks (ESCB) confirmed their connection to the new system.

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<sup>30</sup> At the time, the Bank of England, Danmarks Nationalbank and Sveriges Riksbank.

The system now encompasses Bulgaria and Romania, which connected in February 2010 and July 2011 respectively, following the necessary preparations and testing activities. Thus, currently 24 EU central banks and their respective user communities are connected to TARGET2: the 19 euro area central banks (including the ECB)<sup>31</sup>, and five central banks from non-euro area countries.<sup>32</sup>

## 4 Cooperation with users and information guides

### 4.1 User cooperation

The development of TARGET2 benefited greatly from the close interaction between the Eurosystem and future users of the system. This cooperation on issues related to the system's operation and further development still continues. It is particularly visible in the yearly release management process. Among other things, the involvement of users has greatly improved the understanding of market requirements and is instrumental in ensuring the smooth implementation of changes to the system and high levels of acceptance by the users.

The Eurosystem maintains close relations with TARGET2 participants through regular meetings held between the NCBs connected to the system and the respective national user groups. In addition to the cooperation within national communities, at the European level semi-annual meetings are organised bringing together the Eurosystem, the Working Group on TARGET2 (WGT2) and the TARGET Working Group (TWG), the two working groups comprising representatives of the European banking industry. Two such joint meetings took place in 2014. Overall, operational issues, in particular regarding the management of new system releases, are discussed in these joint meetings and strategic issues are addressed in the Contact Group on Euro Payments Strategy (COGEPS), a forum in which the senior management of commercial and central banks is represented.

Relevant information of interest to the user community is published regularly on the dedicated TARGET2 website, which also features regular updates on the TARGET2 performance indicators (traffic volumes and values, and system availability). As a further method of providing information, the Eurosystem publishes a TARGET newsletter twice a year.

### 4.2 Information guide for TARGET2 users

The "Information guide for TARGET2 users" aims to provide banks and ancillary systems using TARGET2 with a standard set of information which gives their operators a better understanding of the overall functioning of the system and

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<sup>31</sup> The ECB and the central banks of Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Portugal, Slovenia, Spain and the Netherlands, as well as Malta and Cyprus, which joined the euro area in January 2008, Slovakia, which joined the euro area in January 2009, Estonia, which joined the euro area in January 2011, Latvia, which joined the euro area in January 2014, and Lithuania, which joined the euro area in January 2015.

<sup>32</sup> Denmark, Poland, Bulgaria and Romania

enables them to make use of TARGET2 as efficiently as possible. In addition to information on operational procedures under normal circumstances, the information guide also provides information for abnormal and contingency situations and answers the most frequently asked questions relating to TARGET2.

The latest version of the information guide (version 8.0) was made available to the user community on 18 November 2014<sup>33</sup>.

### 4.3 Information guide for TARGET2 pricing

The “Information guide for TARGET2 pricing” provides TARGET2 users with a comprehensive overview of the pricing schemes related to TARGET2 (core services, liquidity pooling, ancillary system services, entities to be invoiced) and describes the billing principles for the various types of transaction. This information guide serves as a reference document for pricing and billing issues, but does not confer any legal rights on operations or entities.

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<sup>33</sup> The information guide is intended solely to provide information on the TARGET2 system and should not be seen as a legal or contractual document.



# Annexes

## 1 Features and functionalities of TARGET2

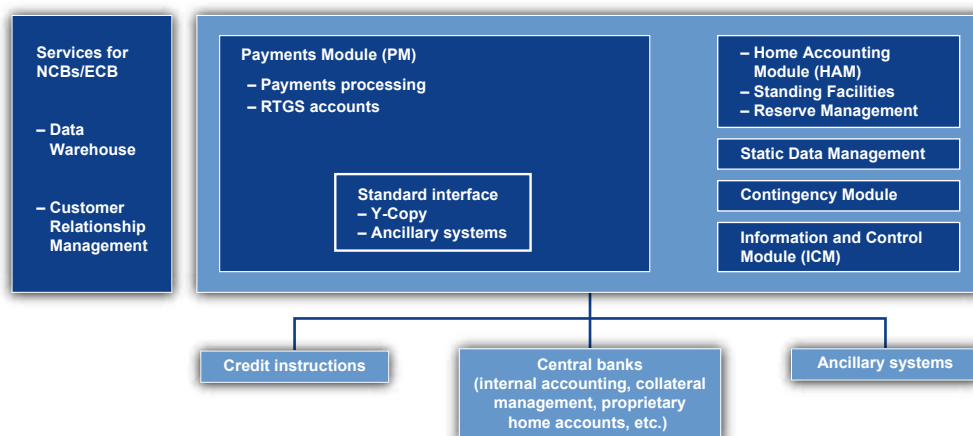
### System structure

A modular approach was adopted for the development of TARGET2's single technical infrastructure, the SSP (see the chart below). Every module in the SSP is closely related to a specific service (e.g. the payment module for the processing of payments). Some of the modules (the home accounting module, the standing facilities module and the reserve management module) can be used by the individual central banks on an optional basis. Central banks which do not use these modules may offer the respective services via proprietary applications in their domestic technical environments.

SWIFT standards and services (FIN, InterAct, FileAct and Browse) are used to enable standardised communication between the TARGET2 system and its participants. Since November 2010 a secured connection via the internet has been available for TARGET2 participants in addition to the SWIFT connection.

**Chart 31**

Structure of the SSP



Source: ECB.

### Business continuity

The business continuity concept of TARGET2 consists of a two-region/two-site architecture. There are two regions for payment processing and accounting services, and within each region there are two distinct sites. The principle of region rotation is applied, which ensures experienced staff are present in both regions.

TARGET2 offers the highest level of reliability and resilience, as well as sophisticated business contingency arrangements commensurate with the systemic importance of the TARGET2 infrastructure.

## Participation

A number of options are provided for accessing TARGET2. These include direct and indirect participation, “addressable BICs” and “multi-addressee access”, also known as “technical BIC access”.

The criteria for direct participation in TARGET2 are the same as for the original TARGET system. Direct participants hold an RTGS account in the payment module of the SSP with access to real-time information and control features. Therefore, they can:

- (i) submit/receive payments directly to/from the system; and
- (ii) settle directly with their respective NCB. Direct participants are responsible for all payments sent from or received on their account by any TARGET2 entity (i.e. indirect participants, addressable BICs and multi-addressee access entities as described below) registered through them.

Indirect participation implies that payment orders are always sent to/received from the system via a direct participant. Payments are settled in the direct participant’s account in the payment module of the SSP. Indirect participants are registered by and are under the responsibility of the direct participants which act on their behalf, and are listed in the TARGET2 directory. Only supervised credit institutions established within the EEA can become indirect participants.

Another category of access which was already available in the original TARGET system is that of TARGET2 addressable BICs. Any direct participant’s correspondent or branch that holds a BIC is eligible to be listed in the TARGET2 directory, irrespective of its place of establishment. Additionally, the Eurosystem has not established any financial or administrative criteria for such addressable BICs, meaning that it is up to the relevant direct participant to define a marketing strategy for offering such a status. It is the responsibility of the direct participant to forward the relevant information to the appropriate NCB for inclusion in the TARGET2 directory.<sup>34</sup> Addressable BICs always send and receive payment orders to/from the system via a direct participant, and their payments are settled in the account of that direct participant in the payment module of the SSP.

Although there is no difference between an indirect participant and an addressable BIC<sup>35</sup> in functional terms, only indirect participants are recognised by the TARGET2 system and, as such, benefit from the protection of the Settlement Finality Directive (in the countries where such protection is granted).

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<sup>34</sup> For routing purposes, an indirect participant/addressable BIC can only be linked to one direct participant.

<sup>35</sup> The TARGET2 directory distinguishes between indirect participants and addressable BICs.

With the multi-addressee access to TARGET2, direct participants are able to authorise branches and other credit institutions belonging to their group, and located in EEA countries, to channel payments through the direct participant's main account without its involvement by submitting/receiving payments themselves directly to/from the system. This offers a direct participant's affiliate banks, or a group of banks, greater efficiency in their liquidity management and payments business. The payments are settled on the account of the direct participant.

## Processing of payments

TARGET2, like its predecessor TARGET, offers its participants settlement services in euro. Any euro payment which participants wish to process in real time and in central bank money can be executed in TARGET2. It supports the SWIFTNet FIN payment types MT103/103- STP, MT202/202COV and MT204. Each payment order can be assigned a specific payment priority ("normal", "urgent" or "highly urgent"). In addition, ancillary systems connected via the ancillary system interface are able to send XML payment messages. Furthermore, the increased time criticality of payments is taken into account by enabling payments to be submitted with a debit time indicator, such as those needed in the context of CLS. Payments to TARGET2 can be submitted up to five business days in advance.

Unless participants have indicated a settlement time, payment orders are settled immediately or at the latest by the end of the business day, provided that sufficient funds are available and no liquidity limits and/or reservations are imposed. For highly urgent and urgent payments, the "first in, first out" (FIFO) principle applies, i.e. they are settled in chronological order. Urgent and normal payments are not settled if highly urgent payments are queued. The only exception is that payments with lower priority will be executed if – and only if – this allows an offsetting transaction to be settled, and the overall effect of this offsetting results in a liquidity increase for the participant in question. Normal payments are also settled in accordance with the FIFO bypassing principle. This means that they are settled immediately (independently of other queued normal payments accepted at an earlier time), provided that sufficient funds are available. Payment orders that are not settled as described in the entry disposition are placed in queues in accordance with their assigned priority. The settlement of queued payments is made as effective as possible by several optimisation procedures on a continuous basis. The participant can also influence the processing of payments by moving payment orders to either the front or the end of the respective queue.

## Liquidity management

The following sources of liquidity can be used in TARGET2: balances on RTGS accounts, provision of intraday liquidity and the offsetting of payment flows (i.e. the use of algorithms to settle a number of queued payments). As with the original TARGET system, intraday credit is granted to participants by the respective NCB against eligible collateral.

A direct participant in the payment module has the option to control the use of available liquidity by means of a reservation and a limit system, which may be combined as required. In TARGET2, it is possible for participants to reserve liquidity for urgent and highly urgent payments and to dedicate liquidity to ancillary system settlement. Participants can also define bilateral and multilateral sender limits and actively manage their payment queues (e.g. by changing the priority or the order of queued transactions).

Furthermore, banks can use a liquidity pooling functionality within a group to view and use their liquidity, irrespective of the RTGS account on which it is held.

Liquidity pooling is achieved by grouping a number of accounts. TARGET2 offers two variants for liquidity pooling: (i) aggregated liquidity; and (ii) consolidated account information. In the aggregated liquidity option, a payment order submitted by a participant belonging to a group of accounts is settled if the payment amount is smaller than or equal to the sum of the liquidity available on all accounts (including credit lines, if any) in the group; otherwise the payment order is queued. The consolidated account information option is an information tool: it gives comprehensive information to the participant subscribing to the service about the liquidity position of all of the entities of the group at any given time. This information is also provided in the aggregated liquidity option. However, in the consolidated account information option, payment amounts are checked only against the liquidity available on the individual RTGS account of the sending participant. In this option, the liquidity available on other accounts in the group is not used to settle the payment. In the event of insufficient liquidity on the sending bank's account, money needs to be transferred to that account.

Only credit institutions directly participating in the system are able to use the consolidated account information option. Owing to business and legal constraints, the virtual account option is only available for accounts of euro area banks held with euro area central banks.

It is only possible to establish a group of accounts for the consolidated account information or aggregated liquidity options among credit institutions fulfilling certain legal criteria.

## Online information and control

TARGET2 users have access, via the information and control module (ICM), to comprehensive online information and control of balances and payments. Through the ICM, TARGET2 users have access to the payment module and the static data (management) module. Depending on the decision of the respective central bank about usage of the optional modules offered by the SSP, participants may also have access to the home accounting facility of the central banks and the applications for reserve management and standing facilities. Only data for the current business day are available through the ICM (the only exception being warehoused payments that have been delivered to TARGET2 up to five business days in advance). Users of the

ICM are able to choose what information they receive and when. Urgent messages (e.g. system broadcasts from central banks and warnings concerning payments with a debit time indicator) are displayed automatically on the screen.

## Ancillary systems

TARGET2 provides cash settlement services in central bank money for a wide variety of ancillary systems, including retail payment systems, large-value payment systems, foreign exchange systems, money market systems, clearing houses and securities settlement systems. The main advantage of TARGET2 for ancillary systems is that they are able to access any account on the SSP via a standardised interface. TARGET2 offers six generic procedures for ancillary system settlement (two real-time procedures and four batch procedures), which represents a substantial harmonisation of current practices.

## Operating dates and times

The TARGET2 system is closed on Saturdays and Sundays and on the following days:

- New Year's Day
- Good Friday (Catholic/Protestant)
- Easter Monday (Catholic/Protestant)
- 1 May (Labour Day)
- Christmas Day
- 26 December.

TARGET2 is open from 7 a.m. to 6 p.m. CET on each of its working days, with a cut-off time of 5 p.m. CET for customer payments.

However, TARGET2 starts the new business day on the evening of the previous day. The night-time window is available from 7.30 p.m. to 7.00 a.m. CET the next day, with a technical maintenance period of three hours between 10 p.m. and 1 a.m. CET. The night-time window<sup>36</sup> facilitates the night-time settlement of the different ancillary systems in central bank money with finality, and also supports cross-system settlement during the night. During the night-time window, liquidity transfers via the ICM between RTGS accounts and the dedicated sub-accounts are technically possible. Ancillary systems and their participants are able to choose whether or not to enable this liquidity transfer functionality, or to limit it. The night-time window generally increases the efficiency of night-time settlement and favours initiatives such as cross-system delivery versus payment for securities systems.

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<sup>36</sup> Only procedure 6 (settlement on dedicated liquidity accounts) of the generic settlement procedures of the SSP's ancillary system interface is offered during the night-time window.

## Pricing

The pricing scheme for TARGET2 core services valid as of 1 January 2013 is:

**Table 4**

The pricing scheme for TARGET2 core services applicable as of 1 January 2013

Core pricing scheme for direct participants:					Before
<b>Option A</b>					
Monthly fee				€150	€100
Flat transaction fee				€0.80	unchanged
<b>Option B</b>					
Monthly fee				€1,875	€1,250
Digressive transaction fee:					
<b>Band</b>		<b>Volume</b>		<b>Price</b>	
		<b>from</b>	<b>to</b>		
1		1	10,000	€0.60	unchanged
2		10,001	25,000	€0.50	unchanged
3		25,001	50,000	€0.40	unchanged
4		50,001	100,000	€0.20	unchanged
5		above 100,000		€0.125	unchanged

The liquidity pooling service (aggregated liquidity option and consolidated account information option) is an optional and separately priced core service. The liquidity pooling service is charged at €100 per account per month for the consolidated account information option and €200 per account per month for the aggregated liquidity option (which includes the consolidated account information option). Furthermore, within a group of accounts (with either the consolidated account information option or the aggregated liquidity option), group pricing applies, which means that the digressive transaction fee is applied to all payments of the group as if they had been sent from one account.

The following pricing scheme applies to the various types of participation in TARGET2, in addition to TARGET2 transaction fees.

**Table 5**

Type of participation	Fee	Frequency	Description	Before
Direct participation	€150 or €1,875	monthly	Depending on the chosen scheme	€100 or €1,250
Multi-addressee access	€80	monthly	Per BIC address in addition to the BIC of the account of the direct participant	unchanged
Indirect participation	€20	monthly	Direct participant is charged for each of an indirect participant	one-off
Addressable BICs – correspondents	€5	monthly	Direct participant is charged for each of an addressable BIC	one-off
Addressable BICs – branches of direct and indirect participants, branches of correspondents and addressable BIC holders that are members of the same group <sup>1)</sup>	€5	one-off	Direct participant is charged for each registration of addressable BIC	unchanged
Unpublished BIC	€30	monthly	Direct participants (SWIFT-based or Internet-based) which do not wish their BIC to be published in TARGET2 Directory	unchanged

1) As defined in Article 1 of Harmonised conditions for participation in TARGET2.

The pricing for internet-based participants consists of a monthly fixed fee of €70 (regardless of whether the account is held in the payment module or the home accounting module) together with additional fees as shown in the table below (similar to the core pricing scheme above).

**Table 6**

Core pricing scheme for Internet-based participants:		Before
Fixed monthly fee	€70	unchanged
Monthly fee for RTGS account	€150	€100
Flat transaction fee	€0,80	unchanged

The pricing scheme for ancillary systems interacting with TARGET2 is set out in the table below.

**Table 7**

Core pricing scheme for ancillary systems:					Before	
1) Fixed fee I: (monthly flat rate per ancillary system)					€1,000	unchanged
2) Fixed fee II: (based on daily underlying gross value)						
	EUR millions/day	Annual fee	Monthly fee			
	€0-1,000	€5,000	€417		unchanged	
	€1,001-2,500	€10,000	€833		unchanged	
	€2,501-5,000	€20,000	€1,667		unchanged	
	€5,001-10,000	€30,000	€2,500		unchanged	
	€10,001-50,000	€40,000	€3,333		unchanged	
	Above €50,000	€50,000	€4,167		unchanged	
3) Transaction fee						
Option A						
	– monthly fee		€150		€100	
	– flat transaction fee		€0,80		unchanged	
Option B						
	– monthly fee		€1,875		€1,250	
	– digressive transaction fee					
Band	Volume		Price			
	from	to				
1	1	5,000	€0.60		unchanged	
2	5,001	12,500	€0.50		unchanged	
3	12,501	25,000	€0.40		unchanged	
4	25,001	50,000	€0.20		unchanged	
5	above 50,000		€0.125		unchanged	

## 2 Chronology of developments in TARGET

### November 1994

In November 1994 the EMI published a report entitled “The EMI’s intentions with regard to cross-border payments in Stage Three”, which sets down the basic principles and objectives as well as the approach to be adopted by NCBs and the EMI in creating a new cross-border payment arrangement for Stage Three of EMU. A system for Stage Three would be established by linking the domestic RTGS facilities. Only the NCBs would hold settlement accounts for banks, although the ECB would also be connected to the NCBs through the interlinking mechanism for the purpose of making payments for its own account or for the account of its customers. To ensure a level playing field for the banks, and to facilitate the creation of a single money market, some harmonisation of the operating features of the domestic RTGS systems was deemed necessary.

### May 1995

Following the decision of the EMI Council to establish the TARGET system, the report entitled “The TARGET system – Trans-European Automated Real-time Gross settlement Express Transfer system, a payment arrangement for Stage Three of EMU” was published in May 1995. In this report the EMI Council defined certain basic principles of the system and confirmed that links would be established between national RTGS systems. These links (the interlinking mechanism), together with the national RTGS systems, would form the TARGET system. In addition, the RTGS systems of non-participating countries (which were not identified at that stage) could be connected to TARGET, but only to process euro. Any participant in any RTGS system connected to TARGET would be entitled to send payments via TARGET and would be obliged to accept any such payment processed through TARGET. Domestic RTGS systems would retain their specific features insofar as this was compatible with the single monetary policy of the Eurosystem and with maintaining a level playing field for credit institutions. A certain level of harmonisation was considered necessary, especially in the following three areas: (i) the provision of intraday liquidity; (ii) operating time; and (iii) pricing policies.

With regard to intraday liquidity, to provide equal access to central bank credit throughout the euro area, it was necessary to harmonise the definition of assets that can be accepted by the NCBs as collateral and the conditions under which their value is taken into account. With regard to operating hours, it was recognised that the interlinking mechanism and the national RTGS systems would need to be open for a large part of the day. Finally, the pricing policies should satisfy three requirements: (i) to avoid unfair competition with the private sector; (ii) to avoid the subsidisation of payments or certain kinds of payment; and (iii) to avoid undue competition within TARGET.



## August 1996

In the summer of 1996 the EMI further defined the features of TARGET, in particular with regard to the following areas: (i) the provision of intraday liquidity; (ii) pricing policies; (iii) operating time; and (iv) relations with other transfer systems, as described in the “First progress report on the TARGET project” and in the “Technical annexes to the first progress report on the TARGET project”.

Intraday liquidity would be provided by NCBs making use of two facilities: fully collateralised intraday overdrafts and intraday repurchase agreements. If reserve requirements were to be imposed for monetary policy reasons, reserve balances would be available on an intraday basis for payment system purposes. Intraday liquidity would be free of interest and potentially unlimited, provided it was fully collateralised. The EMI Council also agreed that collateral would, in principle, be the same for intraday credit as for monetary policy operations.

## December 1996

With regard to the provision of intraday credit in euro to non-euro area NCBs and to participants in RTGS systems of non-euro area countries, the EMI Council decided in December 1996 to prepare three mechanisms<sup>37</sup> aimed at preventing intraday credit granted to non-euro area NCBs from spilling over to overnight credit. The final decision on which mechanism to implement was left to the Governing Council.<sup>38</sup>

The EMI Council agreed that the TARGET pricing policy should have one major objective, namely cost recovery, and that it should take three main constraints into account: (i) it should not affect monetary policy; (ii) it should maintain a level playing field for all participants; and (iii) it should contribute to risk-reduction policies in payment systems.

With regard to operating times, it was decided that, to meet market and risk management needs, TARGET should have long operating hours and, to facilitate the implementation of the single monetary policy and maintain a level playing field for credit institutions, all TARGET components should have a common closing time. Therefore, it was decided, as a general rule, that TARGET would open at 7 a.m. and

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<sup>37</sup> First, non-euro area national central banks would receive from and provide to participants in their respective RTGS systems only limited intraday credit, or none at all. Should a non-euro area national central bank incur an overnight overdraft on one of its accounts with a euro area national central bank, overnight credit would be granted at a penalty rate. Second, non-euro area national central banks would be allowed to incur unlimited intraday overdrafts in euro and could, in turn, grant unlimited collateralised intraday credit to participants in their respective RTGS system. The risk of spillover of intraday credit into overnight credit would be contained through a system of penalties and sanctions applied in the event of overnight overdrafts. Third, participants in RTGS systems in non-euro area countries would be required to complete their operations some time before the closing time of TARGET in order to allow any shortage of funds to become apparent early enough for non-euro area national central banks to be able to offset their RTGS participants' spillover by borrowing euro in the money market while it was still open. (For details, see the report entitled “The single monetary policy in Stage Three – Specification of the operational framework”, EMI, January 1997.)

<sup>38</sup> EMI Annual Report 1996, April 1997.

close at 6 p.m. CET.<sup>39</sup> With regard to relations with other funds transfer systems, it was decided that all large-value net settlement systems would be required to settle in central bank money (i.e. through TARGET).

## September 1997

A number of TARGET features were defined in more detail, in particular with regard to the following areas: (i) operating days; (ii) pricing policies; (iii) the provision of intraday liquidity to non-euro area countries; (iv) the ECB's role; and (v) the provision of settlement services to cross-border large-value net settlement systems. These issues were clarified in an EMI report entitled "Second progress report on the TARGET project", and in the "Technical annexes to the second progress report on the TARGET project".

With regard to operating days, it was decided that, in addition to Saturdays and Sundays, there would be two common holidays for TARGET: Christmas Day and New Year's Day. On all other days, the TARGET system would be open, although NCBs would be allowed to close their domestic systems during national holidays if required by law or by the banking communities. The interlinking mechanism between open RTGS systems would remain open.

In the area of pricing policies, it was decided that a common transaction fee for cross-border TARGET transfers would be charged, based on the principle of full cost recovery and in line with EU competition policy. The pricing of domestic RTGS transfers in euro would continue to be determined at the national level, taking into account that the price of domestic and cross-border transfers in euro should be broadly similar. With regard to the cross-border leg, it was agreed that a single transaction fee would be set within the range of €1.50 to €3.00. In addition, a price differentiation based on volume was envisaged.<sup>40</sup>

With regard to one of the possible mechanisms for the provision of intraday liquidity to non-euro area NCBs, namely an earlier closing time for non-euro area NCBs connected to TARGET, the EMI Council agreed that the earlier cut-off time should not apply to the processing of payments by the non-euro area NCBs, but rather to their use of intraday credit in euro. The time of this liquidity deadline would be determined by the Governing Council, if it chose to implement this option.

Furthermore, it was agreed that the ECB would perform the following functions in TARGET: (i) provide end-of-day and possibly other control procedures for the TARGET system; (ii) provide settlement services to cross-border large-value net settlement systems; (iii) process payments for its own account; and (iv) maintain accounts on behalf of its institutional customers (excluding credit institutions).

For the provision of settlement services to cross-border large-value net settlement systems, the EMI Council agreed on a method for the settlement of the future

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<sup>39</sup> *ibid.*

<sup>40</sup> See also EMI Annual Report, May 1998.

European Banking Association (EBA) clearing system within the euro area. This envisaged that the EBA would open a central settlement account at the ECB and perhaps also settlement accounts with NCBs.

## June 1998

All the EMI Council decisions referred to above were adopted by the Governing Council. Furthermore, a price structure for cross-border TARGET payments was agreed, ranging from €0.80 to €1.75 for direct participants, depending on the number of transactions.<sup>41</sup> The way in which banks' customers would be charged for TARGET payments was left to the discretion of the commercial banks.

## July 1998

The Governing Council decided to grant access to TARGET to NCBs and participants in euro RTGS systems located in Member States outside the euro area. With regard to the availability of intraday liquidity to non-euro area NCBs and their RTGS participants, the ECB decided that, at all times, non-euro area NCBs would have to maintain an overall credit position vis-à-vis the other NCBs participating in or connected to TARGET taken as a whole. To ensure the availability of intraday liquidity in its euro RTGS system, each non-euro area NCB would have to make an intraday deposit with the Eurosystem.

## November 1998

A number of TARGET features were defined in more detail, in particular with regard to the following areas: (i) access to euro RTGS systems linked to TARGET; (ii) provision of intraday credit; (iii) central bank correspondent banking relations; and (iv) the legal framework for TARGET. These issues were addressed in the "Third progress report on the TARGET project".

Only supervised credit institutions located in the EEA could be admitted as direct participants in a national RTGS system. However, certain other entities could also be admitted as participants in a national RTGS system subject to the approval of the relevant NCB.

Unlimited, but fully collateralised, intraday credit would be provided to RTGS participants fulfilling the general counterparty eligibility criteria of the ESCB.<sup>42</sup> Unlimited intraday credit could also be granted to treasury departments of central or regional governments active in the money markets, as well as to public sector bodies

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<sup>41</sup> See also the ECB's press release of 10 June 1998.

<sup>42</sup> See "The single monetary policy in Stage Three: General documentation on ESCB monetary policy instruments and procedures", ECB, September 1998, and the latest version entitled "The implementation of monetary policy in the euro area: General documentation on Eurosystem monetary policy instruments and procedures", ECB, September 2006.

authorised to hold accounts for customers, provided that no spillover to overnight credit was possible. At their own discretion, NCBs could decide to grant intraday credit to investment firms, subject to a formal spillover prevention arrangement. Any arrangement under which an NCB grants intraday credit, in specific circumstances, to organisations providing clearing or settlement services would have to be approved in advance by the Governing Council.

## 4 January 1999

TARGET went live,<sup>43</sup> successfully linking 15 national RTGS systems and the ECB payment mechanism.

However, since the banks needed time to adapt to the new payment system environment and to new treasury management practices, the ESCB provided an “extended service window” between 11 January and 29 January 1999 by delaying the closing time of TARGET by one hour from 6 p.m. to 7 p.m. CET. To avoid any abuse of this arrangement, a special fee of €15 was levied for each payment made during the extra hour. Since the banks gradually adjusted to a more efficient way of managing their liquidity, it was not necessary to continue to extend the opening hours.<sup>44</sup>

## March 1999

With regard to TARGET operating days, in 1999 the system was supposed to remain closed on New Year’s Day and Christmas Day only. However, to safeguard the smooth transition to the year 2000, the Governing Council decided that, as an exception, TARGET would also remain closed on 31 December.<sup>45</sup>

## July 1999

As a result of low payment traffic on traditional public (or bank) holidays, and at the request of the European banking industry, the Governing Council decided on six closing days in 2000 in addition to Saturdays and Sundays. These were New Year’s Day, Good Friday, Easter Monday, 1 May (Labour Day), Christmas Day and 26 December. These were de facto non-settlement days for the money market and the financial markets in euro, as well as for foreign exchange transactions involving the euro. However, in euro area countries where one or other of these days was not a public holiday, the national RTGS system would remain open for limited domestic payment activity.<sup>46</sup>

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<sup>43</sup> For an overview of TARGET developments in 1999, see the ECB’s 1999 Annual Report, April 2000.

<sup>44</sup> See also the ECB’s press release of 11 January 1999 and the March 1999 issue of the ECB’s Monthly Bulletin.

<sup>45</sup> See also the ECB’s press releases of 3 September 1998 and 31 March 1999.

<sup>46</sup> See also the ECB’s press release of 15 July 1999.

## May 2000

The Governing Council decided on the TARGET operating days for 2001. These were the same as for 2000, with the exception of one additional closing day on 31 December, which was introduced to safeguard the smooth transition of retail payment systems and internal bank systems to euro banknotes and coins.<sup>47</sup>

## October 2000

The TARGET Information System was introduced, providing TARGET users with information on the status of the system.

## November 2000

The TARGET 2000 upgrade successfully went live. This was the first common TARGET software release since the system commenced live operations in January 1999. The upgraded software included the new common message format for customer payments, MT103, and the STP version, MT103+.

## December 2000

A long-term calendar was established for TARGET operating days, applicable as from 2002 until further notice. Accordingly, in addition to Saturdays and Sundays, TARGET would be closed on New Year's Day, Good Friday (Catholic/Protestant), Easter Monday (Catholic/Protestant), 1 May (Labour Day), Christmas Day and 26 December. On these closing days, TARGET as a whole, including all the national RTGS systems, would be closed.

A long-term calendar was deemed necessary to eliminate uncertainty for financial markets and to avoid problems arising from different national TARGET operating days. On TARGET closing days, no standing facilities would be available at the NCBs. These days would not be settlement days for the euro money market or for foreign exchange transactions involving the euro. Neither would EONIA be published. Furthermore, the CCBM for the cross-border use of collateral would also be closed on TARGET closing days.<sup>48</sup>

## January 2001

On 1 January 2001 Greece became the twelfth Member State to adopt the single currency. As a result, the Bank of Greece became a member of the Eurosystem and

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<sup>47</sup> See also the ECB's press release of 25 May 2000.

<sup>48</sup> See also the ECB's press release of 14 December 2000.

began participating in TARGET, bound by the same rules as the NCBs of the other participating Member States and the ECB.<sup>49</sup>

## April 2001

In accordance with its policy of transparency through the publication of its legal instruments, the ECB published the Guideline of the ECB on TARGET (TARGET Guideline), which came into force on 1 January 1999.<sup>50</sup> The TARGET Guideline sets out the legal framework for TARGET and lays down the rules governing TARGET and its functions as they apply to the Eurosystem.

## November 2001

As a further step towards the consolidation of large-value payment systems in the euro area, the Deutsche Bundesbank shut down the German hybrid system Euro Access Frankfurt (EAF) on 5 November 2001. On the same day, the Bundesbank launched RTGSplus, the new German TARGET component replacing the former Euro Link System (ELS).

The global TARGET 2001 maintenance release successfully went live on 19 November 2001. The release consisted mainly of the introduction of new SWIFT standards, the validation of negative payment settlement message notifications (PSMNs),<sup>51</sup> and the introduction of a time indication (field 13C, debit stamp) to be transported through the interlinking mechanism and to be made available to credit institutions.

## October 2002

The Governing Council of the ECB took a strategic decision on the direction of the second generation of the TARGET system (TARGET2) to ensure that TARGET would continue to meet customers' future requirements and to accommodate the EU enlargement process.

On 24 October 2002 the Governing Council decided that acceding country central banks would have the possibility, but not the obligation, to connect to TARGET from the date of their joining the EU. Participation in TARGET would become compulsory only on joining EMU.

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<sup>49</sup> See also the ECB's press release of 28 February 2002.

<sup>50</sup> Guideline of the European Central Bank of 26 April 2001 on a Trans-European Automated Real-time Gross Settlement Express Transfer system (Target) (ECB/2001/3), Official Journal L 140, 24 May 2001, p. 72. The Guideline is also available on the ECB's website.

<sup>51</sup> A negative PSMN provides the rejection code (reason for the rejection).

## November 2002

The 2002 TARGET maintenance release successfully went live on 18 November 2002. The release consisted mainly of the introduction of the mandatory validation that MT103+ customer transfers contain a correct IBAN.

The Governing Council decided on the policy framework for the TARGET compensation scheme applicable in the event of a TARGET malfunction.

## December 2002

The Eurosystem launched a public consultation on 16 December 2002 to collect the views of the entire community of TARGET users on the approach to be chosen for TARGET2, as well as on its service level.<sup>52</sup>

## January 2003

On 9 January 2003 the Governing Council of the ECB decided to establish an oversight framework for TARGET. In this respect, two operational objectives for TARGET oversight were identified. First, TARGET oversight would have to verify that the system's existing and envisaged set-up and procedures were compatible with the Core Principles for Systemically Important Payment Systems. Second, any case of non-compliance with the Core Principles would have to be brought to the attention of the decision-making bodies of the ECB so that, if required, measures could be considered and implemented to ensure full compliance with the Core Principles.

## July 2003

A summary of all the responses to the public consultation ("TARGET2: Principles and structure"), together with the individual contributions, was published on the ECB's website on 14 July 2003.<sup>53</sup> All respondents welcomed the Eurosystem's initiative to improve the functionality and performance of TARGET. The banking industry stressed the importance of users being involved in the TARGET2 project. In addition, the contributions received in the public consultation process served as a basis for determining the core features and functions of TARGET2.

The TARGET compensation scheme, which replaced the former reimbursement scheme, came into force on 1 July 2003. It was introduced for the benefit of TARGET participants in the event of TARGET malfunctioning. In designing the scheme, existing market practices were taken into account. The conditions for compensation offers and payments are set out in the TARGET Guideline. The scheme applies to all national RTGS systems participating in or connected to TARGET, and covers

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<sup>52</sup> "TARGET2: Principles and structure".

<sup>53</sup> "Summary of comments received on TARGET2: Principles and structure".

both intra and inter-Member State TARGET payments. A malfunctioning of the ECB payment mechanism affecting TARGET participants would also be covered by the compensation scheme. However, the scheme does not apply to customers in the ECB payment mechanism. Its procedures are largely standardised to keep the administrative burden low.

### November 2003

The 2003 TARGET release successfully went live on 17 November 2003. The main feature of the release was the removal of the customer transfer message type MT100 from the TARGET system. SWIFT stopped supporting this message type and, as TARGET is based on SWIFT messaging standards, TARGET had to do the same.

### June 2004

The 2004 TARGET release successfully went live on 14 June 2004. This release took into account a change in the SWIFT validation rule for IBANs, which came into force on the same day. The change consisted of adding a further six countries.

### December 2004

On 16 December 2004 the Governing Council of the ECB accepted the offer made by three NCBs (Deutsche Bundesbank, Banque de France and Banca d'Italia) and approved the building of a Single Shared Platform (SSP) for the second-generation TARGET system (TARGET2). Further details on the characteristics of TARGET2 were made available in February 2005.

### March 2005

Poland was the first of the ten new Member States to join TARGET. On 7 March 2005 Narodowy Bank Polski's euro RTGS system (SORBNET-EURO) was connected to TARGET via the Banca d'Italia's RTGS system (BIREL).

### November 2006

On 20 November 2006 Estonia was the second of the new Member States to join TARGET. Eesti Pank's euro RTGS system was also connected to TARGET via the Banca d'Italia.



## January 2007

Slovenia joined the euro area. For efficiency reasons, Banka Slovenije decided not to develop its own euro RTGS system, but to use the Deutsche Bundesbank's RTGS system to connect to TARGET. Banka Slovenije commenced operations as a member of the Eurosystem on 2 January 2007.

Following its decision not to join TARGET2, in 2006 Sveriges Riksbank prepared for the disconnection of its TARGET component, E-RIX, effective on 2 January 2007. The majority of Swedish participants anticipated the disconnection and made alternative arrangements to remain connected to TARGET (e.g. either as a direct participant via another central bank, as an indirect participant or through correspondent banking).

## November 2007

On 19 November 2007 the Eurosystem successfully launched the SSP of TARGET2. On the same day, the first migration group – composed of the NCBs and the respective TARGET user communities in Austria, Cyprus, Germany, Latvia, Lithuania, Luxembourg, Malta and Slovenia – was connected to TARGET2.

## February 2008

On 18 February 2008 the second migration group – comprising the NCBs and the respective TARGET user communities in Belgium, Finland, France, Ireland, the Netherlands, Portugal and Spain – successfully connected to TARGET2.

## May 2008

On 19 May 2008 the third and final migration group – comprising the NCBs and the respective TARGET user communities in Denmark, Estonia, Greece, Italy and Poland, as well as the ECB – successfully connected to TARGET2.

## November 2008

After having successfully carried out the necessary acceptance and user tests, SSP release 2.0 went live on 17 November 2008. The elements constituting release 2.0 were the adaptations to the SWIFT standards 2008, the implementation of SWIFT Cash Management Standard CAMT 4.0, and a number of bug fixes.

## December 2008

On 22 December 2008 TARGET2 reached a peak of 576,324 transactions, which represented an all-time high for the system (including the original TARGET) since its launch in January 1999.

## January 2009

Slovakia adopted the euro on 1 January 2009. On the next day, Národná banka Slovenska and its national user community started sending and receiving euro payments via TARGET2.

## May 2009

Exceptionally, two new system releases were scheduled for 2009. The first one (release version 2.1) was an intermediate release that went live on 11 May to enable the cross-CSD settlement functionality in the ancillary system interface. The second one is explained in the next paragraph.

## November 2009

The second release in 2009 (release version 3.0) was implemented on 23 November, enhancing the system's real-time online monitoring tool and implementing the new message standard MT202COV, among other new features.

## February 2010

After completing all the preparatory work, Българска народна банка (Bulgarian National Bank) and its national user community connected to TARGET2. This connection brought 18 new participants to TARGET2 (16 commercial banks, one ancillary system and Българска народна банка (Bulgarian National Bank)).

## November 2010

The yearly release in 2010 (release version 4.0) went live on 22 November. Since then, TARGET2 users have been able to access the SSP through the internet and not solely through the SWIFT network. This feature improves access to TARGET2 primarily for smaller banks. In addition, SSP release 4.0 brought some minor changes to fine-tune the services for the banking community as well as some services for the central banks.

## July 2011

On 4 July the Banca Națională a României (Romanian National Bank) and its national user community connected to TARGET2 after having completed all the preparatory work. As a result, 23 new participants joined TARGET2 (22 commercial banks and the national central bank).

## November 2011

The yearly release in 2011 (release version 5.0) was implemented, as always, during the third weekend of November to coincide with the SWIFT Standard Release. The most important change to TARGET2 in 2011 was the technical implementation of an alternative network for central banks in case of a SWIFT outage, which allows for the timely execution of (very) critical payments on behalf of the participants in a more efficient way.

## September 2012

On 19 September 2012 the Eurosystem approved, for the first time since TARGET2 began operations, amendments to the TARGET2 pricing policy which entered into force in January 2013.

## October 2012

The strategy for the migration of TARGET2 to ISO 20022 was approved. According to the strategy, in the future TARGET2 will use a new set of ISO 20022-compliant payment messages. The migration will follow the “like-for-like approach”, which ensures full compatibility with the legacy standards. There will be no overlap between the old and new standards, and the date for the migration is November 2017.

## January 2013

In the context of the introduction of the new pricing scheme, a new participation type was introduced: “addressable BIC – branch of correspondent”. This new category allows a more precise differentiation among the various categories of participants in the SSP.

## November 2013

The yearly release in 2013 (version 7.0) was implemented, on the same weekend of November as the SWIFT Standard Release. The most important change to TARGET2 in 2013 was the connection of TARGET2 to T2S. The new software for this was implemented on the SSP but will not be activated until the T2S go-live date.

## November 2014

The yearly release in 2014 (version 8.0) was implemented, again on the same weekend as the SWIFT MT Standards release. Only one T2S related change request (Partial execution Lt T2S-Actor) was implemented in this release.

## 3 General terms and abbreviations

### Countries

BE	Belgium	LU	Luxembourg
BG	Bulgaria	HU	Hungary
CZ	Czech Republic	MT	Malta
DK	Denmark	NL	Netherlands
DE	Germany	AT	Austria
EE	Estonia	PL	Poland
IE	Ireland	PT	Portugal
GR	Greece	RO	Romania
ES	Spain	SI	Slovenia
FR	France	SK	Slovakia
IT	Italy	FI	Finland
CY	Cyprus	SE	Sweden
LV	Latvia	UK	United Kingdom
LT	Lithuania		

### Others

ASI	ancillary system interface
BIC	Business Identifier Code
BIS	Bank for International Settlements
CCBM	correspondent central banking model
CET	Central European Time
CLS	Continuous Linked Settlement
CM	contingency module
CPSS	Committee on Payment and Settlement Systems
EAF	Euro Access Frankfurt
EBA	European Banking Association
ECB	European Central Bank
ECBS	European Committee for Banking Standards
EEA	European Economic Area
ELS	Euro Link System
EMI	European Monetary Institute
EMU	Economic and Monetary Union
EONIA	euro overnight index average
EPM	ECB payment mechanism
ERM II	exchange rate mechanism II
ESCB	European System of Central Banks
EU	European Union
EURO1	EU-wide payment system of the EBA
FIN	financial application; store and forward messaging service on the SWIFT network
FIN copy	function of the SWIFT network whereby instructions may be copied and optionally authorised by a third party before being released to the beneficiary

GFS	general functional specifications
IBAN	International Bank Account Number
ICM	information and control module
IFFM	interlinking free format message
IMF	International Monetary Fund
ISIM	interlinking statistical information message
ISO	International Organization for Standardization
ITES	interlinking test environment system
LVPS	large-value payment system
MAC	message authentication code
MT103	message type
MT103STP	message type
MT202	message type
MT202COV	message type
NCB	national central bank
NMP	national migration profile
NSS	net settlement system
PHA	proprietary home account
PM	payment module
PSMN	payment settlement message notification
PSMR	payment settlement message request
PSPWG	Payment Systems Policy Working Group
PSSC	Payment and Settlement Systems Committee
PvP	payment versus payment
Repo	repurchase operation
RTGS	real-time gross settlement
SFD	Settlement Finality Directive
SO	Standing order
SSP	Single Shared Platform
SSS	securities settlement system
STP	straight-through processing
SWIFT	Society for Worldwide Interbank Financial Telecommunication
SWIFTNet	store and forward messaging
FIN	service for financial institutions on the SWIFTNet platform
TARGET	Trans-European Automated Real-time Gross settlement Express Transfer system
TARGET2	second-generation TARGET system
T2S	TARGET2-Securities
TCP/IP	transmission control protocol/ internet protocol
T2IS	TARGET2 Information System
TWG	TARGET Working Group
UDFS	User Detailed Functional Specifications
WGT2	Working Group on TARGET2

## Glossary

**Ancillary system interface (ASI):** A standardised interface to the TARGET2 payment module that can be used by ancillary systems to perform the cash clearing of their business.

**Availability:** A criterion for evaluating a system on the basis of its back-up facilities and the possibility of switching over to them. See **TARGET availability**.

**Business Identifier Code (BIC):** A universal means of identifying (financial) institutions in order to facilitate the automated processing of telecommunication messages in financial environments.

**Business continuity:** A payment system or securities settlement system arrangement that aims to ensure that the system meets agreed service levels even if one or more components fail or if it is affected by another abnormal event. This includes both preventive measures and arrangements to deal with these events. See **TARGET contingency measures**.

**Central bank credit (liquidity) facility:** A standing credit facility which can be drawn upon by certain designated account holders (e.g. banks) at a central bank. The facility can be used automatically at the initiative of the account holder. The loans typically take the form of either advances or overdrafts on an account holder's current account which may be secured by a pledge of securities or by repurchase agreements. See **daylight credit, marginal lending facility**.

**Clearing/clearance:** The process of transmitting, reconciling and, in some cases, confirming payment orders or security transfer instructions prior to settlement, possibly including the netting of instructions and the establishment of final positions for settlement. Sometimes the terms are used (imprecisely) to include settlement.

**Continuous Linked Settlement (CLS) Bank:** CLS Bank provides global multi-currency settlement services for foreign exchange transactions, using a payment-versus-payment (PvP) mechanism, meaning that a foreign exchange operation is settled only if both counterparties simultaneously have an adequate position in the currency they are selling.

**Collateral:** Assets pledged (e.g. by credit institutions with central banks) as a guarantee for the repayment of loans, as well as assets sold (e.g. to central banks by credit institutions) as part of repurchase agreements.

**Correspondent banking:** An arrangement whereby one credit institution provides payment and other services to another credit institution. Payments through correspondents are often executed through reciprocal accounts (nostro and loro accounts), to which standing credit lines may be attached. Correspondent banking services are primarily provided across national borders, but are also provided in some domestic contexts, where they are known as agency relationships. A loro account is the term used by a correspondent to describe an account held on behalf of a foreign credit institution; the foreign credit institution would in turn regard this account as its nostro account.

**Correspondent central banking model (CCBM):** A mechanism established by the ESCB within the TARGET system to enable counterparties to obtain credit from the central bank of the country in which they are based using collateral held in another country. In the CCBM, an NCB acts as custodian for the other NCBs with regard to the securities held in its domestic securities settlement system (SSS).

**Counterparty:** The opposite party in a financial transaction (e.g. any party transacting with a central bank).

**Credit institution:** (i) An undertaking whose business is to receive deposits or other repayable funds from the public and to grant credit for its own account; or (ii) an undertaking or any other legal person, other than those under (i), which issues means of payment in the form of electronic money.

**Credit risk/exposure:** The risk that a counterparty will not settle an obligation in full, either when due or at any time thereafter. Credit risk includes the replacement cost risk and the principal risk. It also includes the risk of settlement bank failure.

**Credit transfer:** A payment order or, sometimes, a sequence of payment orders made for the purpose of placing funds at the disposal of the beneficiary. Both the payment instructions and the funds described therein move from the bank of the payer/originator to the bank of the beneficiary, possibly via several other banks as intermediaries and/or more than one credit transfer system.

**Credit transfer system:** A funds transfer system through which payment orders move from (the bank of) the originator of the transfer message or payer to (the bank of) the receiver of the message or beneficiary.

**Customer payment:** A payment where the originator or the final beneficiary, or both, are not financial institutions.

**Daily processing:** The complete cycle of processing tasks that needs to be completed in a typical business day, from start-of-day procedures to end-of-day procedures, including the backing-up of data.

**Daily settlement:** The completion of settlement on the day of value of all payments accepted for settlement.

**Daylight credit:** Credit extended for a period of less than one business day. Daylight credit (also referred to as intraday credit) may be extended by central banks to even out mismatches in payment settlements. In a credit transfer system with end-of-day final settlement, daylight credit is, in effect, extended by a receiving institution if it accepts and acts on a payment order even though it will not receive final funds until the end of the business day.

**Deposit facility:** A standing facility of the Eurosystem which counterparties may use to make overnight deposits at an NCB, which are remunerated at a pre-specified interest rate.

**Direct debit:** A pre-authorised debit on the payer's bank account initiated by the payee.



**Economic and Monetary Union (EMU):** The Treaty describes the process of achieving EMU in the EU in three stages. Stage One of EMU started in July 1990 and ended on 31 December 1993; it was mainly characterised by the dismantling of all internal barriers to the free movement of capital within the EU. Stage Two began on 1 January 1994, and provided for, inter alia, the establishment of the EMI, the prohibition of financing of the public sector by the NCBs, the prohibition of privileged access to financial institutions by the public sector and the avoidance of excessive government deficits. Stage Three started on 1 January 1999 with the transfer of monetary competence to the ECB and the introduction of the euro. The cash changeover on 1 January 2002 completed the set-up of EMU.

**European Economic Area (EEA) countries:** The EU Member States plus Iceland, Liechtenstein and Norway.

**EONIA (euro overnight index average):** A measure of the effective interest rate prevailing in the euro interbank overnight market. It is calculated as a weighted average of the interest rates on unsecured overnight lending transactions denominated in euro, as reported by a panel of contributing banks.

**ERM II (exchange rate mechanism II):** The exchange rate arrangement that provides the framework for exchange rate policy cooperation between the euro area countries and the EU Member States that are not participating in Stage Three of EMU.

**Exchange-for-value settlement system:** A system which involves the exchange of assets, such as money, foreign exchange, securities or other financial instruments, in order to discharge settlement obligations. These systems may use one or more funds transfer systems in order to satisfy the payment obligations which are generated. The links between the exchange of assets and the payment system(s) may be manual or electronic.

**Final (finality):** Irrevocable and unconditional.

**Final settlement:** Settlement which is irrevocable and unconditional.

**Final transfer:** An irrevocable and unconditional transfer which effects a discharge of the obligation to make the transfer. The terms “delivery” and “payment” are both defined as a final transfer.

**Financial application (FIN):** A SWIFT-offered application enabling financial institutions to exchange structured message-based financial data worldwide in a secure and reliable manner.

**Financial risk:** A term covering a range of risks incurred in financial transactions, e.g. liquidity and credit risks. See also **liquidity risk**, **credit risk/exposure**.

**Foreign exchange settlement risk:** The risk that one party to a foreign exchange transaction will transfer the currency it has sold, but not receive the currency it has bought. This is also called cross-currency settlement risk or principal risk. (Sometimes it is additionally referred to as Herstatt risk, although this is an inappropriate term given the differing circumstances in which this risk materialises. See **Herstatt risk**.)

**Gridlock:** A situation which can arise in a funds or securities transfer system, in which a failure to execute one or more transfer instructions (because the necessary funds or securities balances are unavailable) prevents the execution of a substantial number of other instructions from other participants. See also [queuing](#), [systemic risk](#).

**Gross settlement system:** A transfer system in which the settlement of funds or securities occurs individually (on an instruction-by-instruction basis).

**Herstatt risk:** The risk of loss in foreign exchange trading as a result of one party delivering foreign exchange, while the counterparty financial institution fails to complete its end of the contract. This is also referred to as settlement risk. See [foreign exchange settlement risk](#).

**Hybrid system:** A payment system which combines characteristics of RTGS systems and netting systems.

**Information and control module:** A mandatory and unique functional interface between TARGET2 direct participants and the Single Shared Platform (SSP).

**Inter-Member State payment:** A payment between counterparties maintaining an account with different central banks.

**International Bank Account Number (IBAN):** The IBAN concept was developed by the European Committee for Banking Standards (ECBS) and by the International Organization for Standardisation (ISO), and is an internationally agreed standard. It was created as an international bank identifier, used to uniquely identify the account of a customer at a financial institution, to assist error-free customer payments between Member States, and to improve the potential for straight-through processing (STP), with a minimum amount of change within domestic schemes.

**Incident:** A situation that prevents the system from functioning normally or causes substantial delays.

**Interbank payment:** A payment where both the originator and the final beneficiary are financial institutions.

**Interlinking mechanism:** One of the components of the TARGET system. The term is used to designate the infrastructures and procedures which link domestic RTGS systems in order to enable the processing of inter-Member State payments within TARGET.

**Internet-based access:** A connection mode to the Single Shared Platform (SSP) that offers direct access to the main TARGET2 services. It is an alternative to connecting via the SWIFT network.

**Internet-based participant:** A direct participant that connects to TARGET2 via the internet. See also [internet-based access](#).

**Intraday credit:** See [daylight credit](#).

**Intraday liquidity:** Funds which can be accessed during the business day, usually to enable financial institutions to make payments in real time. See also **daylight credit**.

**Intra-Member State payment:** A payment between counterparties maintaining an account with the same central bank.

**Irrevocable and unconditional transfer:** A transfer that cannot be revoked by the transferor and is unconditional (and therefore final).

**ISO 20022:** International standard for developing financial message standards, the methodology of which features the representation of business processes and related transactions in a formal but syntax-independent notation.

**Large-value funds transfer system:** A funds transfer system through which large-value and high-priority funds transfers are made between participants in the system for their own account or on behalf of their customers. Although, as a rule, no minimum value is set for the payments they carry, the average size of payments passed through such systems is usually relatively large. Large-value funds transfer systems are also known as wholesale funds transfer systems.

**Large-value payments:** Payments, generally of very large amounts, which are mainly exchanged between banks or between participants in the financial markets and usually require urgent and timely settlement.

**Legal risk:** The risk of loss owing to the unexpected application of a law or regulation or because a contract cannot be enforced.

**Liquidity risk:** The risk that a counterparty will not settle an obligation at its full value when due, but instead on some unspecified date thereafter.

**Message authentication code (MAC):** A hash algorithm parameterised with a key to generate a number which is attached to the message and used to authenticate it and guarantee the integrity of the data transmitted.

**Marginal lending facility:** A standing facility of the Eurosystem which counterparties may use to receive overnight credit from an NCB at a pre-specified interest rate against eligible assets. See also **central bank credit (liquidity) facility**.

**MT202COV:** The MT202COV is a general-use message, which means that registration in a Message User Group is not necessary in order to send and receive this message. The message contains a mandatory sequence to include information on an underlying customer credit transfer and has a maximum message length of 10,000 characters.

**Net settlement system (NSS):** A funds transfer system, the settlement operations of which are completed on a bilateral or multilateral net basis.

**Obligation:** A duty imposed by contract or by law.

**Operational risk:** The risk of human error or a breakdown of some component of the hardware, software or communications system which is crucial to settlement.

**Oversight of payment systems:** A central bank task, principally intended to promote the smooth functioning of payment systems. The objectives of oversight are to protect the financial system from the possible domino effects which may occur when one or more participants in the payment system encounter credit or liquidity problems, and to foster the efficiency and soundness of payment systems. Payment systems oversight addresses a given system as a whole (e.g. a funds transfer system) rather than individual participants. It also covers payment instruments.

**Pan-European automated clearing house (PE-ACH):** A business platform for the processing of euro payment instruments which is made up of governance rules and payment practices and supported by the necessary technical platform(s).

**Payment:** The payer's transfer of a monetary claim to a party acceptable to the payee. Typically, claims take the form of banknotes or deposit balances held at a financial institution or at a central bank.

**Payment message/instruction/order:** An order or message to transfer funds (in the form of a monetary claim on a party) to the account of the beneficiary. The order may relate either to a credit transfer or to a debit transfer. See also **credit transfer, direct debit, payment**.

**Payment system:** A payment system consists of a set of instruments, banking procedures and, typically, interbank funds transfer systems which facilitate the circulation of money.

**Payment settlement message notification (PSMN):** The response to a payment settlement message request (PSMR) (see below), which can be either positive or negative. It is normally positive (indicating that the beneficiary's settlement account in the receiving NCB's/the ECB's books has been successfully credited), but may also be negative, in which case it is returned to the sending central bank with an error code.

**Payment settlement message request (PSMR):** The settlement of TARGET payments between Member States involves the exchange of PS MRs from the sending NCB/the ECB and payment settlement message notifications (PSMNs) (see above) from the receiving NCB/the ECB. The sender of the PS MR requests the receiver to process a payment; this message requires a positive or negative PSMN from the receiver.

**Payment versus payment (PvP):** A mechanism in a foreign exchange settlement system which ensures that a final transfer of one currency occurs if, and only if, a final transfer of the other currency or currencies takes place.

**Principal risk:** The risk that a party will lose the full value involved in a transaction (credit risk). In the settlement process, this term is typically associated with exchange-for-value transactions when there is a lag between the final settlements of the various legs of a transaction (i.e. the absence of delivery versus payment). The principal risk which arises from the settlement of foreign exchange transactions (foreign exchange settlement risk) is sometimes called cross-currency settlement risk or Herstatt risk. See **credit risk/exposure**.

**Queuing:** An arrangement whereby transfer orders are held pending by the originator/deliverer or by the system until sufficient cover is available in the originator's/deliverer's clearing account or under the limits set against the payer; in some cases, cover may include unused credit lines or available collateral.

**Real-time processing:** The processing of instructions at the time they are received rather than at some later time.

**Remote participant:** A participant in a system which has neither its head office nor any of its branches located in the country where the system is based.

**Remote access to TARGET:** The possibility for an institution established in one country in the European Economic Area (EEA) to become a direct participant in the RTGS system of another country and, for this purpose, to have a settlement account in euro in its own name with the NCB of the second country without necessarily having established a branch or subsidiary in that country.

**Repurchase agreement:** An agreement to sell an asset and to repurchase it at a specified price on a predetermined future date or on demand. Such an agreement is similar to collateralised borrowing, although it differs in that the seller does not retain ownership of the assets.

**Repurchase operation (repo):** A liquidity-providing reverse transaction based on a repurchase agreement.

**Reserve requirement:** The minimum amount of reserves a credit institution is required to hold with the Eurosystem. Compliance is determined on the basis of the average of the daily balances over a maintenance period of around one month.

**Retail payments:** This term describes all payments which are not included in the definition of large-value payments. Retail payments are mainly consumer payments of relatively low value and urgency.

**Real-time gross settlement (RTGS):** The continuous (real-time) settlement of funds or securities transfers individually on an order-by-order basis with intraday finality (without netting).

**RTGS system:** A settlement system in which processing and settlement take place on an order-by-order basis (without netting) in real time (continuously).

**Settlement:** An act which discharges obligations in respect of funds or securities transfers between two or more parties. Settlement may be final or provisional. See **gross settlement system**, **net settlement system**, **final settlement**.

**Settlement risk:** A general term used to designate the risk that settlement in a transfer system will not take place as expected. This risk may comprise both credit and liquidity risk.

**Single Shared Platform (SSP):** TARGET2 is based on a single technical platform, known as the Single Shared Platform, which includes payment and accounting processing services and customer-related services.

**Standing facility:** A central bank facility available to counterparties on their own initiative. The Eurosystem offers two overnight standing facilities: the marginal lending facility and the deposit facility.

**Straight-through processing (STP):** The automated end-to-end processing of trades/payment transfers, including the automated completion of generation, confirmation, clearing and settlement of instructions.

**Swap:** An agreement on the exchange of payments between two counterparties at some point(s) in the future in accordance with a specified formula.

**SWIFT (S.W.I.F.T. s.c.r.l.) (Society for Worldwide Interbank Financial Telecommunication):** A cooperative organisation created and owned by banks which operates a network designed to facilitate the exchange of payment and other financial messages between financial institutions (including broker-dealers and securities companies) throughout the world. A SWIFT payment message is an instruction to transfer funds; the exchange of funds (settlement) subsequently takes place through a payment system or through correspondent banking relationships.

**Systemic risk:** The risk that the inability of one institution to meet its obligations when due will cause other institutions to be unable to meet their obligations when due. Such failure may cause significant liquidity or credit problems and, as a result, could threaten the stability of or confidence in markets.

**Systemically important payment system:** A payment system is deemed systemically important if, in the event of being insufficiently protected against risk, disruption within it could trigger or transmit disruption to participants or cause broader systemic disruption in the financial area.

**Transmission control protocol/ internet protocol (TCP/IP):** A set of commonly used communications and addressing protocols; TCP/IP is the de facto set of internet communication standards.

**TARGET availability:** The ratio of time when TARGET is fully operational to TARGET opening time.

**TARGET:** Trans-European Automated Real-time Gross settlement Express Transfer system: the Eurosystem's real-time gross settlement system for the euro. The first-generation TARGET system was replaced by TARGET2 in May 2008.

**TARGET2:** The second-generation TARGET system. It settles payments in euro in central bank money and functions on the basis of a single shared IT platform, to which all payment orders are submitted for processing.

**TARGET2-Securities:** The Eurosystem's single technical platform enabling central securities depositories and NCBs to provide core, borderless and neutral securities settlement services in central bank money in Europe.

**TARGET business continuity:** The ability of each national TARGET component to switch to a remote secondary site in the event of a failure at the primary site, with the goal of enabling normal operations to resume within the shortest time possible.

**TARGET contingency measures:** Arrangements in TARGET which aim to ensure that it meets agreed service levels during abnormal events even when the use of an alternative site is not possible or would require too much time.

**TARGET market share:** The percentage processed by TARGET of the large-value payments in euro exchanged via all euro large-value payment systems. The other systems are EURO1 (EBA) and Pankkien On-line Pikasiirrot ja Sekit-järjestelmä (POPS).

**Transfer:** Operationally, the sending (or movement) of funds or securities, or of rights relating to funds or securities, from one party to another party by: (i) the conveyance of physical instruments/money; (ii) accounting entries on the books of a financial intermediary; or (iii) accounting entries processed through a funds and/or securities transfer system. The act of transfer affects the legal rights of the transferor, the transferee and possibly third parties with regard to the money, security or other financial instrument being transferred.

**Transfer system:** A generic term covering interbank funds transfer systems and exchange-for-value systems.

## Additional tables and charts

**Table 8**

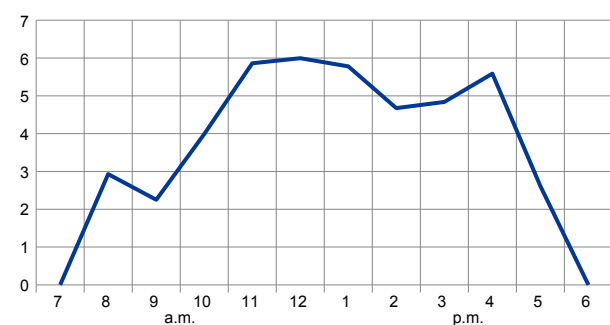
Distribution of payment flows in TARGET2

	2014				2013			
	Value	Percentages	Volume	Percentages	Value	Percentages	Volume	Percentages
AT	7,271.11	1	1,153,840	0.01	5,308	1.1	1,203,469	1.3
BE	21,998.26	4	2,593,066	0.03	21,402	4.3	2,377,168	2.6
BG	327.57	0	223,528	0.00	337	0.1	185,649	0.2
CY	131.14	0	138,692	0.00	144	0.0	222,441	0.2
DE	156,907.55	32	44,002,798	0.49	151,591	30.7	45,811,977	49.5
DK	2,906.87	1	165,123	0.00	3,461	0.7	195,749	0.2
EE	246.26	0	157,026	0.00	275	0.1	106,418	0.1
ES	62,310.67	13	7,247,100	0.08	65,095	13.2	7,676,862	8.3
EU	9,977.12	2	173,187	0.00	7,513	1.5	150,506	0.2
FI	10,045.62	2	413,086	0.00	9,894	2.0	406,988	0.4
FR	86,777.47	18	9,381,795	0.10	87,565	17.7	9,116,908	9.8
GR	6,599.88	1	847,207	0.01	8,618	1.7	1,094,548	1.2
IE	3,901.02	1	915,414	0.01	3,720	0.8	915,285	1.0
IT	41,417.98	8	11,512,599	0.13	37,465	7.6	10,381,309	11.2
LT	73.68	0	108,244	0.00	75	0.0	110,761	0.1
LU	17,273.61	4	1,244,505	0.01	17,009	3.4	1,121,502	1.2
LV	342.26	0	356,274	0.00	132	0.0	349,817	0.4
MT	87.18	0	76,333	0.00	99	0.0	60,269	0.1
NL	59,187.95	12	6,385,111	0.07	69,341	14.1	7,981,616	8.6
PL	410.80	0	816,214	0.01	323	0.1	811,432	0.9
PT	2,791.45	1	1,211,548	0.01	2,735	0.6	1,090,288	1.2
RO	94.55	0	249,404	0.00	105	0.0	211,433	0.2
SI	684.01	0	709,016	0.01	607	0.1	687,768	0.7
SK	667.60	0	255,926	0.00	627	0.1	319,971	0.3
	<b>492,432</b>		<b>90,337,036</b>		<b>493,442</b>		<b>92,590,134</b>	

**Chart 32**

Intra-day pattern of customer payments in 2014 - value

(EUR billions)

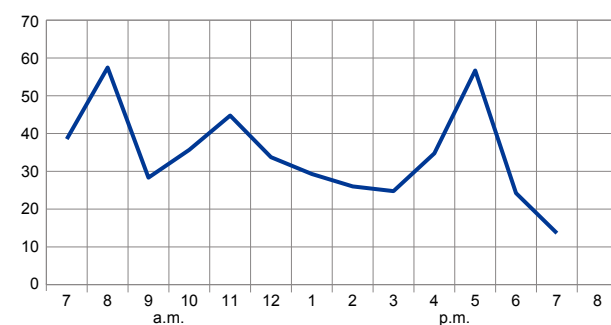


Source: ECB.

**Chart 33**

Intra-day pattern of interbank payments in 2014 - value

(EUR billions)

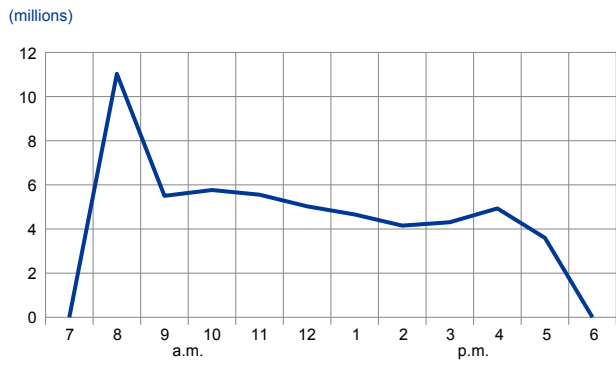


Source: ECB.



**Chart 34**

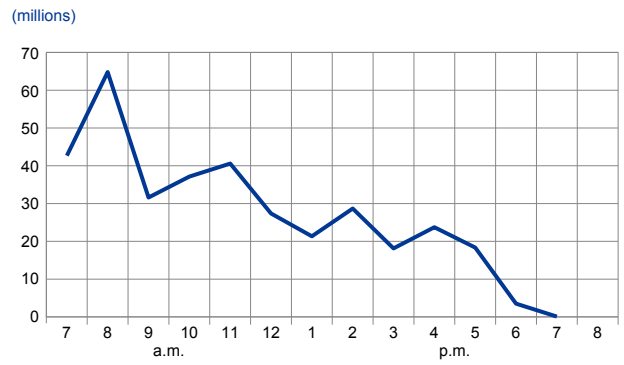
Intra-day pattern of customer payments in 2014 - volume



Source: ECB.

**Chart 35**

Intra-day pattern of interbank payments in 2014 - volume



Source: ECB.