



EUROPEAN CENTRAL BANK

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# TARGET ANNUAL REPORT 2012





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## TARGET ANNUAL REPORT

2012

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## INTRODUCTION

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 in supporting financial stability. The Eurosystem's main instrument for carrying out this task<sup>1</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>2</sup> for the euro.

The market infrastructure for payments<sup>3</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 ensures 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 complexity and importance of the market infrastructure for payment handling has greatly increased over the last two decades, owing to the high growth in volumes and values of financial activities, financial innovation and advancements in information and communication technologies.

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 to settle payments connected with monetary policy operations, interbank payments, and transactions related to other payment and securities settlement systems (e.g. 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.

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

- 1 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 securities clearing and settlement systems;
  - ensuring an integrated regulatory and oversight framework for securities settlement systems;
  - acting as a catalyst for change (e.g. by promoting the SEPA initiative).
- 2 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.
- 3 A payment is defined as the process by which cash, deposit claims or other monetary instruments are transferred between economic agents.

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. Most credit institutions use it to make payments on their own behalf or on behalf of other (indirect) participants. Almost 1,000 banks in Europe use TARGET2 to initiate payments on their own behalf or on their customers' behalf. Taking into account branches and subsidiaries, almost 60,000 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 thirteenth 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 2012. 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 the TARGET2 traffic activity, its performance and the main developments that took place in 2012. 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 acronyms, and a glossary.

In addition to the core content, the report includes boxes that provide detailed information on topics of particular relevance in 2012, as well as an in-depth analysis of specific TARGET2 features. In this edition, the boxes focus on the ISO 20022 migration strategy for TARGET2, changes in the TARGET2 pricing, issues related to TARGET2 balances, compliance with anti-money laundering rules, and the ongoing analysis of TARGET2 critical participants and liquidity-saving features.

In the following paragraphs, 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 I

## TARGET2 ACTIVITY IN 2012

The TARGET2 system functioned smoothly in 2012 and confirmed its leading position in the European landscape, processing 92% of the total value of payments in large-value euro payment systems. The volume of payments processed in TARGET2 rose slightly by 1.2% compared with the previous year, reaching 90.6 million transactions, while the total value of payments increased by 3.5%, reaching a total of €634 trillion. The average daily volume was 354,185 transactions, with an average daily value of €2,477 billion. The availability of the Single Shared Platform (SSP) of TARGET2 reached 100%. Finally, the highest TARGET2 daily payments volume of the year was registered on 29 June 2012, when 536,524 transactions were processed, while on 1 March the highest daily turnover of 2012 was registered, with a total value of €3,718 billion.

### I EVOLUTION OF TARGET2 TRAFFIC

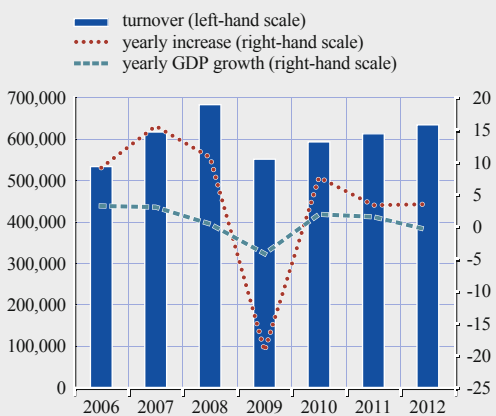
#### I.1 TARGET2 TURNOVER

In 2012 TARGET2 settled transactions with a total value of €634,132 billion, which corresponds to a daily average value of €2,477 billion (see Chart 1). The TARGET2 turnover grew for the third year in a row, after the sharp drop registered in 2009, which was caused by the effects of the financial crisis and changes in the statistical methodology used.<sup>1</sup> The growth rate of the system's turnover in 2012 was slightly higher than in the previous year, reaching 3.5% in 2012 compared with 3.3% in 2011. Still, the level of increase in the system's turnover is lower than levels recorded before 2009. This can be attributed to the intensification of the sovereign debt crisis and the disruptions it created in euro area money markets.

As an effect of the crisis, there was a contraction of the unsecured money market transactions processed in TARGET2. In this period the Eurosystem injected a large amount of liquidity into the euro area banking system via its non-standard monetary policy operations. The fact that these refinancing operations were offered with a longer than usual maturity also played a role in limiting TARGET2 turnover, as the frequency of settlement of these amounts decreased. For instance, €1 provided via one of the three-year longer-term refinancing operations (LTROs) contributed only €2 to the system's turnover (€1 payment + €1 repayment),<sup>2</sup> while the same liquidity provided by standard weekly operations would have multiplied this amount by the number of weekly operations conducted.

Chart 1 TARGET/TARGET2 turnover

(EUR billions; percentages)



Source: ECB.

- <sup>1</sup> In accordance with the new TARGET2 statistical methodology adopted in 2009, transactions that are made for purely technical reasons or that are due to the accounting structure of TARGET2 have been excluded from the reporting. As a result, only transactions causing a change in the legal ownership of the money are taken into account. While the effects of these changes have been limited as regards the volumes in TARGET2, their impact on the values has been significant.
- <sup>2</sup> For the purposes of this example, the amount of interest paid by the counterparty was not taken into consideration.



**Table 1 Evolution of TARGET2 overall traffic**

|               | EUR billions |         | Percentage increase | Number of payments |            | Percentage increase |
|---------------|--------------|---------|---------------------|--------------------|------------|---------------------|
|               | 2011         | 2012    |                     | 2011               | 2012       |                     |
| Total         | 612,936      | 634,132 | 3.46                | 89,565,697         | 90,671,378 | 1.23                |
| Daily average | 2,385        | 2,477   | 3.86                | 348,505            | 354,185    | 1.63                |

Source: ECB.

Note: There were 257 operating days in 2011 and 256 in 2012.

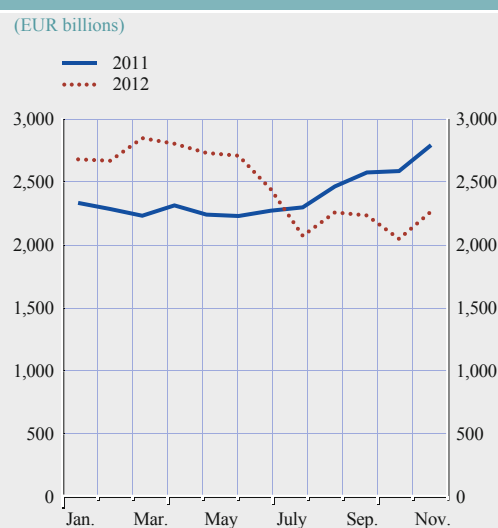
Interbank transactions (i.e. transactions exclusively involving credit institutions) still accounted for the vast majority of the system's turnover, representing 94% of transactions between TARGET2 participants in 2012, with the remaining share accounted for by customer transactions (i.e. transactions involving at least one non-banking party, for example a corporate or an individual).

As illustrated by Chart 1, the yearly growth of the TARGET2 turnover roughly correlates with the yearly growth of euro area GDP, as the value settled in TARGET2 largely follows the evolution of economic activity in the euro area.

A comparison of the TARGET2 turnover and the euro area's annual GDP (€9,483 billion) shows that TARGET2 settles the equivalent of the annual GDP in less than four days of operations. This indicates the role and efficiency of TARGET2, which provides intraday finality for transactions and allows the funds credited to the participant's account to become immediately available for other payments. Consequently, the same euro can be reused several times by several TARGET2 participants within the same day.

Chart 2 looks at the average daily value settled in TARGET2 on a monthly basis and thereby illustrates the seasonal pattern of TARGET2 operations; however, in 2012 the pattern was strongly affected by the drastic drop in volume in the middle of the year. In the first half of 2012, the value settled in TARGET2 was distinctly higher than that of the corresponding months in 2011. This trend inverted in July and in the last five months of the year the turnover was visibly lower than in the same period in the previous year. These fluctuations mainly resulted from a change in the behaviour of market participants after July 2012 (i.e. after the Eurosystem deposit facility rate was cut to 0%), when the transfers to overnight deposits significantly decreased.<sup>3</sup> While these deposits increased overall in 2012 as a whole, there was a drop in the second half of the year. In practice, excess funds were being left on

**Chart 2 Average daily TARGET2 turnover**

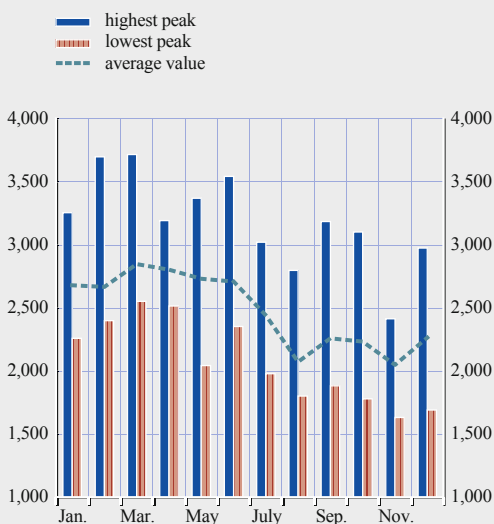


Source: ECB.

<sup>3</sup> The impact of the daily transfers related to the Eurosystem deposit facility was eliminated in January 2013 by the implementation of amended TARGET2 statistical reporting rules, in line with which such operations are no longer taken into account for the calculation of the TARGET2 turnover.

Chart 3 TARGET2 values in 2012

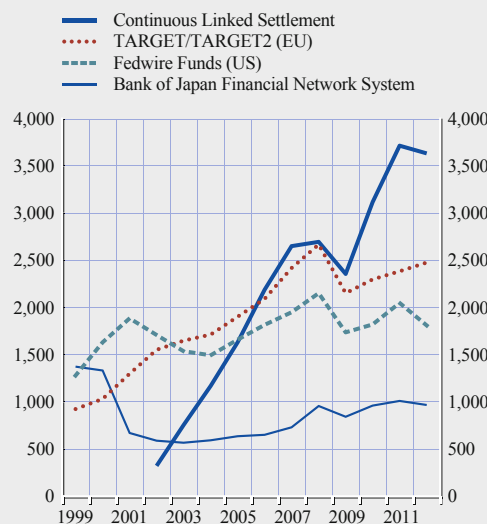
(EUR billions)



Source: ECB.

Chart 4 Major large-value payment systems in the world

(average daily turnover in EUR billions (equivalent))



Source: ECB.

participants' RTGS accounts overnight, and not placed on the deposit facility, as funds placed there were no longer remunerated.

Chart 3 gives an overview of the highest and lowest values for TARGET2, as well as the average values for each month of 2012. Typically, for a given month, a higher level of traffic is registered on the last business day owing to reimbursements and due dates in various financial markets. As the chart shows, the effect is even more pronounced if that day is also the end of a quarter. The peak value for the year is also normally registered at the end of a quarter. However, in 2012 the peak in terms of turnover (€3.7 trillion) was recorded on 1 March 2012, i.e. the day on which the three-year longer-term refinancing operations (LTROs) were settled.

It should also be noted that the seasonality of TARGET2's turnover throughout 2012 was significantly more pronounced than in 2011, with a deviation of 56% between the highest and the lowest figures (compared with 33% in 2011). Such a significant gap can be explained by the timing of the main monetary policy operations conducted by the Eurosystem (namely the three-year LTROs conducted on 21 December 2011 and 29 February 2012), as well as the above-mentioned drop in transfers to the Eurosystem facility.

Peaks in value can also be influenced by other factors, such as the TARGET holidays or the end of a maintenance period. As regards the lowest values, they are typically observed on days that are national holidays for some Member States, such as Ascension Day, which is a national holiday in many countries.

Finally, Chart 4 provides a comparison of the average daily values settled in the major payment systems worldwide over the last twelve years.<sup>4</sup> It illustrates the position of TARGET/TARGET2 vis-à-vis the

<sup>4</sup> In order to achieve a meaningful comparison, the value of settlements in foreign systems has been converted into euro using the exchange rate on 31 December of the year in question.

largest payment systems in the world, namely Continuous Linked Settlement (CLS), Fedwire Funds (the RTGS system operated by the Federal Reserve System) and the Bank of Japan Financial Network System (BOJ-NET). While some common patterns can be seen in the evolution of the turnover of the four systems in recent years, in 2012 the slow growth in TARGET2 turnover contrasted with a decrease in settled values by both Fedwire Funds and CLS. The rapid increase in the average daily turnover that took place between 2009 and 2011 in CLS was partly associated with the higher volatility in financial markets – in particular in the forex markets – and partly with the new aggregation service introduced by CLS, which caused an increase in the turnover figures. However, the differences in the trends as observed in 2012 also result from the volatility of the euro’s exchange rate vis-à-vis the US dollar, which distorts the figures reported in Chart 4 in respect to both Fedwire Funds and CLS.<sup>5</sup>

## 1.2 TARGET2 VOLUME

In 2012 a total of 90,671,378 transactions were settled in TARGET2, which corresponds to a daily average of 354,185 transactions. These figures are slightly higher compared with 2011, having increased by 1.2% and 1.6% respectively. While the increases were observed in the large majority of countries and in particular in non-euro area countries, the figures that were lower than in the previous year were recorded in countries that have been affected by the sovereign debt crisis.

Overall, although the TARGET2 developments of the last three years show signs of a weak recovery, this has not been sufficient to bring the TARGET2 traffic back up to pre-crisis levels.

Compared with the objectives set during the TARGET2 project’s development phase, the level of traffic registered in the system in 2012 was short by 27.5 million transactions. Therefore, as section 4 of Chapter 1 will show, in order to cope with lower than expected traffic, which

Chart 5 TARGET/TARGET2 traffic

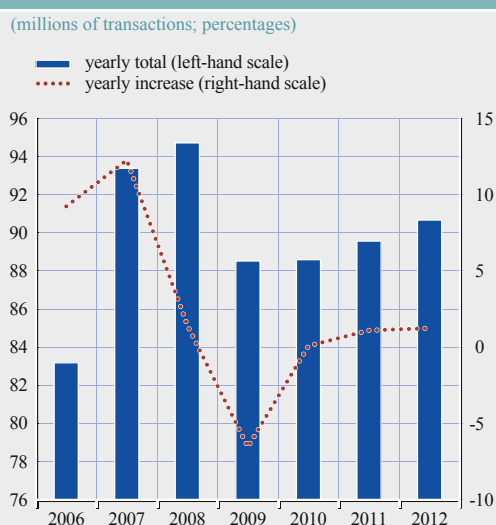
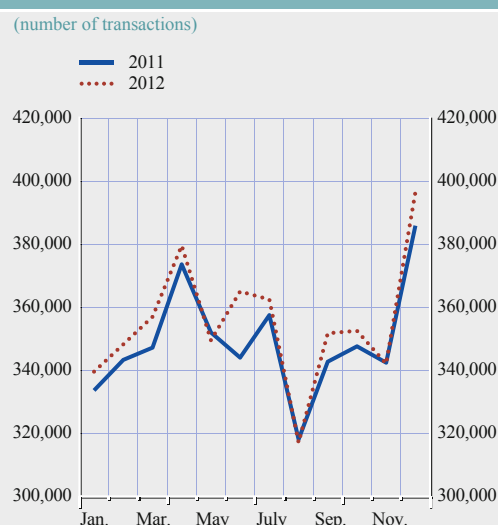


Chart 6 Average daily TARGET2 volumes



<sup>5</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.

affects the system's cost recovery, the Eurosystem decided to amend the single pricing scheme of TARGET2, based on updated figures.

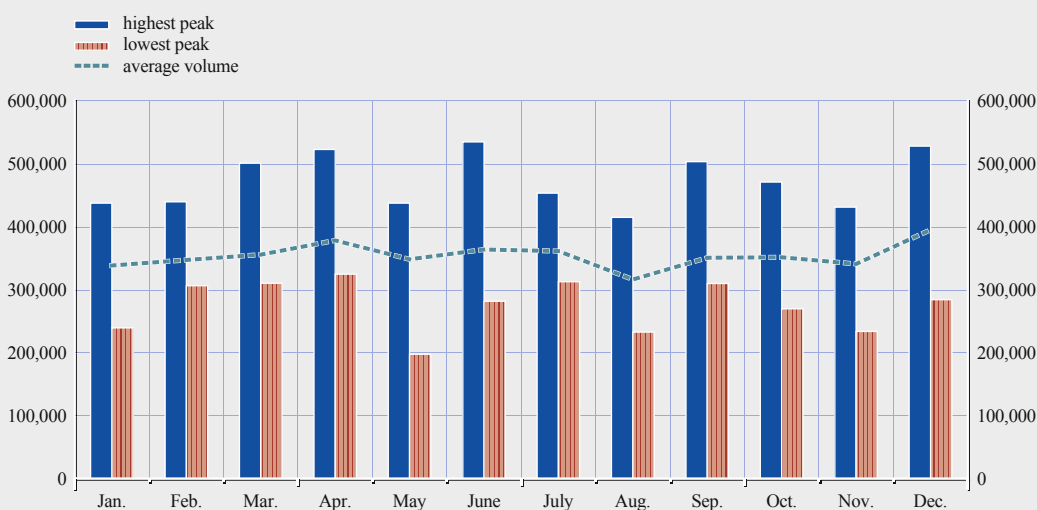
As in previous years, customer transactions represented the majority of the system's traffic, accounting for 60% of the total number of TARGET2 payments, and remained stable in comparison with 2011. The remaining share was accounted for by interbank transactions and operations with central banks.

Chart 6 looks at the average daily volume settled in TARGET2 on a monthly basis and depicts the seasonality of the system's traffic. The traffic in 2012, which almost mirrors the fluctuations observed in 2011, shows a seasonal pattern that is quite typical for TARGET2. Accordingly, as also confirmed by the monthly distribution of TARGET2 volumes (see Chart 7), higher volumes are recorded at the end of each quarter, with a higher peak in December.

Chart 7 gives an overview of the highest and lowest recorded figures in terms of volume for the Single Shared Platform (SSP)<sup>6</sup> in 2012 and the average volume for each month. As with peaks in terms of value, the highest volume figures are typically reported on the last business day of the month, with this being particularly pronounced at the end of a quarter owing to several deadlines in the financial markets and for corporate business. The highest peak in volume of the whole year was recorded at the end of June, with May registering the lowest volume. On average, the highest volumes, as in previous years, were recorded in December, reflecting the effect of end-of-year payments in the system. In the rest of the year the distribution was more regular. As with recorded figures in terms of value, the lowest traffic volume is, in general, recorded on days that are national holidays in some Member States, such as, in 2012, Epiphany on 6 January, Ascension Day on 17 May, the Assumption of Mary on 15 August, and All Saints' Day on 1 November.

Chart 7 TARGET2 volumes in 2012

(number of transactions)

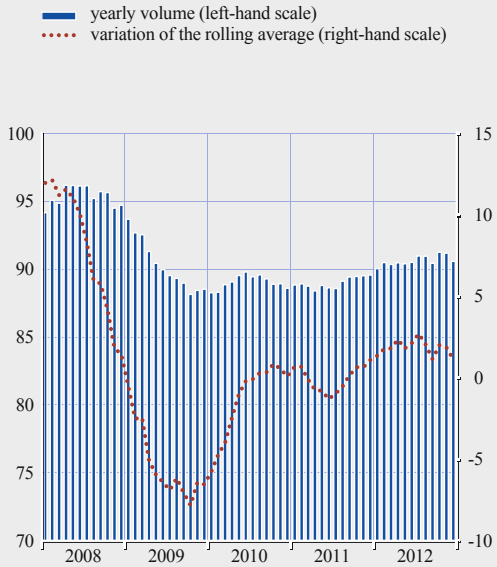


Source: ECB.

<sup>6</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 also include the traffic stemming from the proprietary home account (PHA) systems.

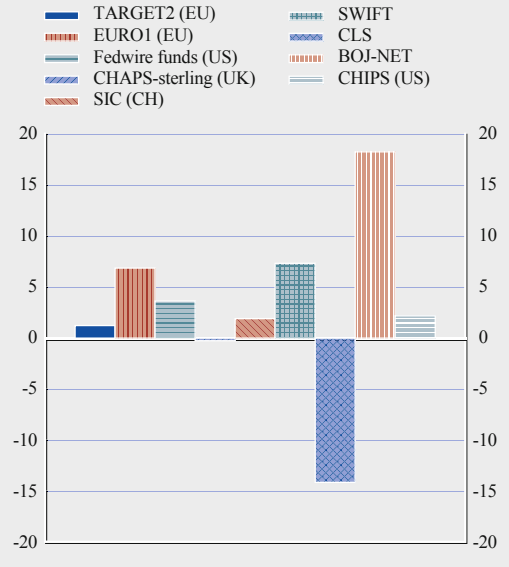
**Chart 8 TARGET/TARGET2 volumes**

(rolling average, millions of transactions; percentages)



Source: ECB.

**Chart 9 Comparison of the changes in traffic in some major large-value payment systems and SWIFT (2011-12)**



Source: ECB.

Chart 8 shows the yearly moving average of TARGET/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 TARGET/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. Since then, TARGET/TARGET2 volumes have roughly stabilised at around 90 million transactions per year, with yearly growth rates that never exceed a few percentage points. The figure reached in December 2012 was still more than five million transactions below the peak reached in April 2008.

Chart 9 presents a comparison of the changes in TARGET2 traffic with changes in the traffic in other similar large-value payment systems, in Europe (EURO1) and other currency zones (CHAPS-Sterling, Fedwire Funds, BOJ-NET, CHIPS and SIC), as well as with the SWIFT volumes (for financial application (FIN) payment messages), for the period end-2011 to end-2012. The chart shows an overall increase in recorded traffic, with the exception of CHAPS and, more markedly, CLS. However, in this context it should be noted that, as far as CLS is concerned, the comparison is not completely accurate as CLS does not settle payments, but, strictly speaking, foreign exchange deals.

Box I

**TARGET2 BALANCES OF NATIONAL CENTRAL BANKS (NCBs)**

TARGET2 allows commercial banks in Europe to settle their payments transactions, including those relating to Eurosystem central bank operations, on a shared platform and in central bank money.

When a bank makes a payment to a bank in another country in TARGET2, the transaction changes the banks' current accounts at the respective central banks. The settlement of these cross-border payments in TARGET2 results in intra-Eurosystem balances which are automatically aggregated and netted out at the end of each day. This leaves each central bank with a single net bilateral position (i.e. claim or liability) vis-à-vis the ECB.<sup>1</sup>

Before the crisis, TARGET2 balances were relatively stable because cross-border payment flows tended to be broadly balanced across the euro area. Since the start of the crisis, TARGET2 liabilities have increased considerably for some NCBs (see chart).

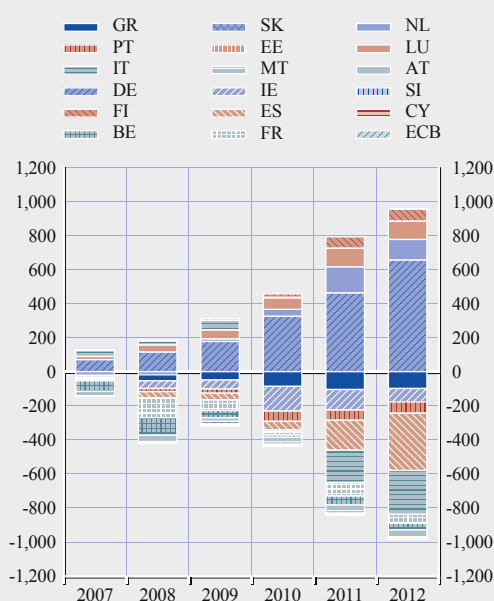
**TARGET2 balances of euro area NCBs**

This increase in TARGET2 negative balances is due to the fact that, in the countries in question, payment outflows in euro have not been matched by payment inflows in euro. At the same time, access to funding by private markets in most of those banking systems has become severely impaired and the net outflows in cumulative terms in those banking systems have required more central bank liquidity than usual. The Eurosystem provided these funds via its non-standard monetary policy measures and, in doing so, it ensured that solvent banks were not liquidity-constrained in their funding (notably by virtue of the fixed-rate full allotment procedure) and supported an effective transmission of monetary policy to the wider euro area economy, thereby helping to maintain price stability over the medium term. This resulted in an uneven distribution in the provision of central bank liquidity in the Eurosystem, as reflected in the TARGET2 balances.

NCBs that provided more liquidity than usual to their banking system in net terms have a negative TARGET2 balance vis-à-vis the ECB, while the NCBs that provided less liquidity in net terms have a claim vis-à-vis the ECB. As the latter banking systems have net payment

**TARGET/TARGET2 balances of euro area NCBs**

(EUR billions)



Source: ECB.

<sup>1</sup> Like any other central bank connected to TARGET2, the ECB also has its own TARGET2 balance. This balance results essentially from the provision of foreign currency to certain banking systems (via their NCBs) in exchange for euro.

inflows from other euro area countries, they have ample liquidity available and less need than usual for recourse to monetary policy operations in order to continue lending to households and firms in their economies.

In the context of the monetary union, a TARGET2 claim is not necessarily a measure of the financial risk exposure of the NCB in question. The risk associated with the provision of central bank liquidity to banks as part of monetary policy implementation is mitigated by a risk management framework, which includes the requirement of adequate collateral valued at market prices and subject to haircuts. Besides the pledge of collateral, the banks remain fully responsible for their borrowings obtained from the Eurosystem. The residual risk that may emerge despite risk management features is, as a rule, shared among the euro area NCBs according to their share of the ECB's capital.

#### **TARGET2 and banking groups: the centralised liquidity management of multi-country banks**

The process described above that leads to the emergence of TARGET2 balances takes place on a large scale between national banking systems in the euro area. In fact, around one third of TARGET2 traffic is made up of cross-border payments. TARGET2 balances thus reflect the imbalances in payment flows between national banking systems.

Banks that have a TARGET2 account at a given NCB essentially mirror the monetary financial institution (MFI) sector in that country. However, discrepancies may appear. Namely, in any of the following scenarios, the TARGET2 balance of the "host" central bank would be affected by transactions initiated by banking entities that are not part of the MFI sector in that country.

- A bank established in a given euro area country may connect to TARGET2 via the NCB of another country. In general, this "remote" connection is established in addition to the "main" connection via the NCB of the country where the bank is based, and is established to support a specific business case.
- Participation in TARGET2 is not limited to banks established in the euro area or in EU Member States whose NCBs are connected to TARGET2. Credit institutions established in the European Economic Area (EEA) may also become TARGET2 participants and directly send/receive payments through the system. This is possible, for instance, for credit institutions from non-EU EEA countries (e.g. Norway and Iceland) or from EU Member States whose NCBs are not connected to TARGET2 (e.g. United Kingdom and Sweden). In these cases, the credit institution opens an account with any of the EU NCBs connected to TARGET2. If a bank based in, for example, the United Kingdom remotely connects to TARGET2 via an account at, say, De Nederlandsche Bank, the balance of De Nederlandsche Bank would also reflect the flows generated or received by this UK-based bank.
- While banks established outside the EEA are not eligible to have an account in TARGET2, they can connect via a subsidiary in one of the euro area countries. If a US bank chooses to be connected to TARGET2 via one of its subsidiaries, for example in Germany, and via an account it has at the Deutsche Bundesbank, the balance of the Deutsche Bundesbank would also reflect the flows generated or received by this US-based bank via its subsidiary.

- TARGET2 participants established in the euro area may provide correspondent banking services in euro to any bank in the world. If, for example, a bank based in Japan uses as a euro correspondent a TARGET2 participant based in France, the balance of the French NCB would also reflect the flows that the correspondent sends or receives on behalf of its client.

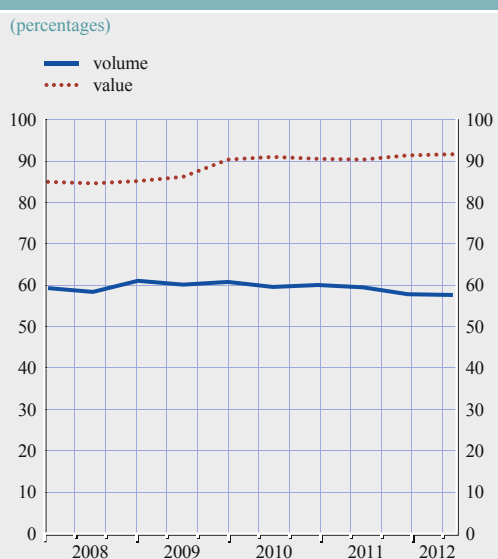
Another “geographical” distortion that may exist in the TARGET2 balances relates to the centralisation of liquidity management in multi-country groups. That is, TARGET2 allows multi-country banks to carry out their payments activity and to manage their euro liquidity from one single account, irrespective of the number of countries in which these groups are active. Typically, the single TARGET2 account is opened at the NCB of the country in which the head office is located, and the other branches or subsidiaries within the banking group channel their payments via the head office (indirect participation). This centralisation gives rise to cross-border flows that would not exist if the group managed its liquidity in a decentralised manner.

### 1.3 COMPARISON WITH EURO1

TARGET2’s position in the euro-denominated large-value payment system (LVPS) landscape is defined as the percentage of traffic processed in TARGET2 out of all traffic flowing through the two large-value payment systems operating in euro, namely TARGET2 and EURO1, the system operated by EBA Clearing. In past years the traffic of TARGET2 was compared with that of three other euro-denominated LVPSs, thus determining its “market share”. Over the years, however, two of the other LVPSs ceased operations.<sup>7</sup> For that reason, the exercise now focuses only on comparing TARGET2 and EURO1.

In 2012 the share of TARGET2 in terms of value processed remained high, at 91.6%, i.e. marginally higher compared with the previous year. In terms of volume, during 2012 the TARGET2 share decreased slightly, from 59% in 2011 to 57.7%. However, in this context it should be noted that, although this indicator is referred to as the share of large-value euro payment systems, the actual composition of the traffic in the two systems is largely made up of commercial payments. Moreover, while the ancillary system transactions and the monetary policy transactions have to be settled using TARGET2, for the settlement of the remaining transactions, banks can also use other channels, such as automated clearing houses, pan-European automated clearing houses and correspondent banking. Therefore the indicator only offers an incomplete picture of the market’s preferences in terms of the settlement of large-value payments.

Chart 10 Market share of volumes and values settled in TARGET2



Source: ECB.

<sup>7</sup> The Spanish system Servicio Español de Pagos Interbancarios (SEPI) ceased operations in December 2004, and the French system Paris Net Settlement (PNS) ceased operations in February 2008.



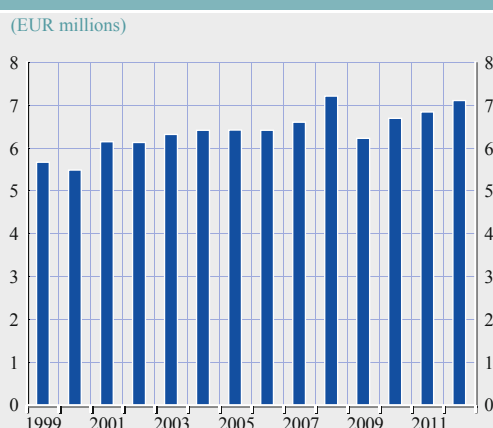
However, a similar pattern is observed when comparing the percentage of total transactions accounted for by interbank transactions (as opposed to customer transactions) in both systems – in 2012 in TARGET2 they represented 94% in terms of turnover and 40% in terms of volume, while in EURO1 they amounted respectively to 76% and 31%.

#### 1.4 VALUE OF TARGET/TARGET2 PAYMENTS

Chart 11 shows the evolution of the value of TARGET/TARGET2 payments since 1999. The average value of a payment in 2012 stood at €7.1 million, with slight growth registered each year following the drop in 2009 owing to the financial crisis. Interestingly, the exceptionally high average value registered in 2008 (€7.2 million) was caused by peculiar circumstances linked to the financial turmoil and the crash that followed the bankruptcy of Lehman Brothers.

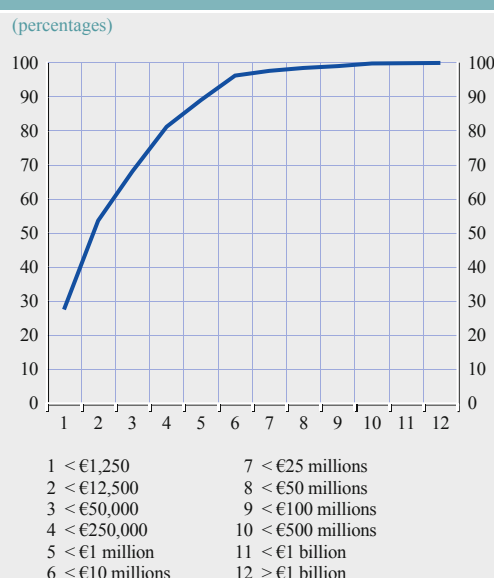
Chart 12 illustrates the distribution of TARGET2 transactions per value band, indicating the percentage of the volume that is below certain thresholds. As in previous years, more than two-thirds of all TARGET2 transactions were for values lower than €50,000, and payments in excess of €1 million only accounted for 11% of the traffic. On average, there were 305 payments per day with a value above €1 billion, which accounted for 0.1% of payment flows. From this wide distribution of transaction values, the median payment in TARGET2 is around €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, even though TARGET2 was designed primarily to settle large-value payments for interbank operations, it offers a range of features attracting a high number of low-value transactions, most of which are of a commercial nature. Interestingly, this pattern has not been affected by SEPA – related developments, such as the increasing usage of SEPA Credit Transfers (SCT), which accounted for 35% of the total retail credit transfers in December 2012. One might have expected fewer low-value customer

**Chart 11 Average value of a TARGET/TARGET2 payment**



Source: ECB.

**Chart 12 Distribution of TARGET2 transactions across value bands in 2012**



Source: ECB.

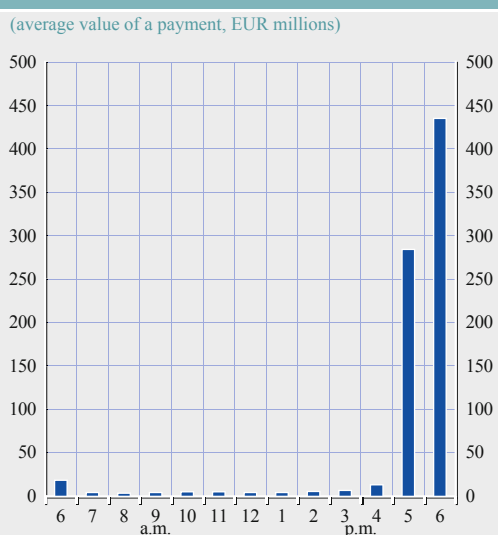
transactions to be processed in TARGET2, with transactions moving to PE-ACH (Pan-European Automated Clearing House), which supports SEPA Credit Transfers (these transfers are not supported by TARGET2). As the share of low-value transactions in TARGET2 remains stable, these trends confirm that TARGET2 does not substitute, and is not directly competing with, retail systems. On the contrary, TARGET2 complements the service provided by retail systems by allowing real-time settlement in central bank money, which is particularly relevant for urgent customer transactions.

This phenomenon, however, is not isolated, and a similar pattern is also a characteristic of other large-value payment systems.<sup>8</sup>

Finally, Chart 13 provides the average value of TARGET2 payments executed at different times of the day. As in previous years, in 2012 TARGET2 settlement was marked by a strong intraday pattern. The higher average value of transactions before 7 a.m. CET stems from the night-time settlement transactions, which are mainly generated by securities settlement systems. After the opening of the system at 7 a.m. CET, the hourly average value of transactions fluctuates slightly throughout the day and reaches a second peak between 5 p.m. and 6 p.m. CET, due to banks squaring their balances and refinancing themselves on the money market, and their recourse to the deposit facilities with central banks. After 6 p.m. CET the average value of payments shows a further significant increase. Within this time, transactions related to liquidity transfers from proprietary home accounts (PHAs), among others, are settled.

8 In Fedwire Funds (United States), for example, during the first quarter of 2010 the median value of a payment was USD 17,500, with 3% of the payments of a value lower than USD 300 and 75% lower than USD 125,000. For more information, see Bech, M.L., Martin, A. and McAndrews, J., "Settlement Liquidity and Monetary Policy Implementation – Lessons from the Financial Crisis", *FRBNY Economic Policy Review*, 2012.

Chart 13 Intraday pattern for 2012



Source: ECB.

## Box 2

### ANALYSIS OF LIQUIDITY-SAVING FEATURES IN TARGET2

On average, TARGET2 settles more than 90% of the volume and around 80% of the value immediately, i.e. in real time.<sup>1</sup> This high level of performance is facilitated by the current high availability of liquidity in the system and the free-of-charge access to intraday credit in

1 The traffic that is not settled immediately goes into queues and is processed via optimisation algorithms. Reasons for payments that have entered the system going into a queue include insufficient liquidity in the settlement account of the participant or a choice on the part of the participant itself to use time indicators available in TARGET2 in order to settle that payment only at (or by) specific times of the business day.

TARGET2. The Eurosystem is keen to provide the best possible service in terms of liquidity efficiency, and thus offers comprehensive optimisation and liquidity management tools to the TARGET2 participants, as follows:

- payment priority (normal, urgent or highly urgent);
- liquidity reservation (per priority class);
- payment timing (earliest/latest debit time);
- active queue management (queue reordering, priority change, execution time indicators modification, payments cancellation);
- sender limits (bilateral and multilateral);
- liquidity pooling (aggregated liquidity – virtual account – or consolidated information for groups of accounts).

In addition to the features offered to TARGET2 participants to aid their active management of liquidity within the system, the system offers a highly advanced queue management tool composed of four settlement (event- or time-driven) algorithms to optimise the settlement process of queued payments and ancillary system transactions.<sup>2</sup> This combination of customer-ready and in-built instruments reduces the effective liquidity needs of the system's participants and makes TARGET2 a state-of-the-art RTGS system.

The Eurosystem and the service-providing central banks (the “3CB”, i.e. the Deutsche Bundesbank, the Banque de France and the Banca d'Italia) periodically review the effectiveness of the current setup of TARGET2 through continuous monitoring and the analysis of the usage of its features. In fact, while on the one hand the non-availability of these features could lead to delays in the settlement of payments, which could result in gridlock with payments remaining unsettled, on the other hand the usage of these features depends on various aspects, such as specific practices or liquidity situations in the different banking communities across the Eurosystem.

After four years of TARGET2 operations, in 2012 the Eurosystem started examining the past usage of the available liquidity-saving features through the analysis of historical data, with the aim of identifying potential enhancements. A group of Eurosystem experts has been appointed to continue this study.

One of the main findings of the analysis is that drawing conclusions on the features' actual usage means solving a multi-dimensional equation: while there may be rather sudden changes

<sup>2</sup> The four algorithms available are:

- all-or-nothing optimisation (algorithm 1);
- partial optimisation (algorithm 2);
- multiple optimisation (algorithm 3);
- partial optimisation with ancillary system (algorithm 4).

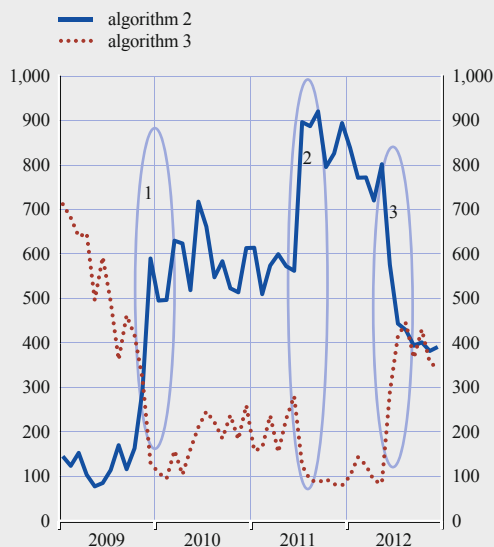
Algorithm 1 was deactivated in 2009. The individual active algorithms are used either sequentially or according to the situation. This is to respond in a flexible way to changed liquidity conditions during the operating day. For more information on the settlement algorithms in TARGET2, see the User Detailed Functional Specifications (UDFS) book 1 on the TARGET2 website.

in the central bank TARGET2 operators' employment of specific tools, understanding the causes of these changes is normally more complex. Changes might be triggered, among other things:

- by technical changes in the system and at bank level;
- by changes in the habits of the system's participants or in the regulatory requirements that govern their operations;
- by the modification of the composition of specific banking groups or banking communities;
- by changes in the level of awareness or understanding of TARGET2 participants concerning the availability and functioning of liquidity-saving features;
- by significant changes in the overall liquidity provision within banking communities or across ancillary system.

Chart A Changes in settlement with algorithms 2 and 3

(monthly data in EUR billions)



Source: ECB.

For instance, when looking at the settlement of queued transactions via algorithms 2 and 3, three remarkable changes are immediately visible. In fact, these developments are not linked to changes in the overall liquidity situation<sup>3</sup> or to the habits of the TARGET2 participants. Rather, the sudden peaks of the curves reflect technical changes implemented in the TARGET2 software. Algorithms 2 and 3 are timed algorithms running sequentially during the whole settlement day. In the initial setup in 2008, if an algorithm was successful in settling queued transactions, it would run again and try to settle another group of transactions; if it was not successful, the next algorithm would run. The settlement logic of algorithm 2 was optimised in November 2009. As a consequence, the efficiency of this algorithm significantly increased (see first peak in the chart). In June 2011, the running period of algorithm 2 was extended from until 4.30 p.m. to until 6 p.m. (see second peak in the chart). Since May 2012, the sequencing of the algorithms has no longer depended on the success of the first algorithm but has always alternated (see convergence of the curves in the chart).

If instead we look at the overall number of changes to liquidity reservations for urgent and highly urgent payments in, for example, the second quarter of the last four years, the explanation of the change resides in the behaviour of a few TARGET2 participants. In particular, the substantial change between the second quarter of 2009 and the same period in the subsequent years was determined by two TARGET2 participants that had been modifying the reservations for urgent payments many times more frequently on a given day than most

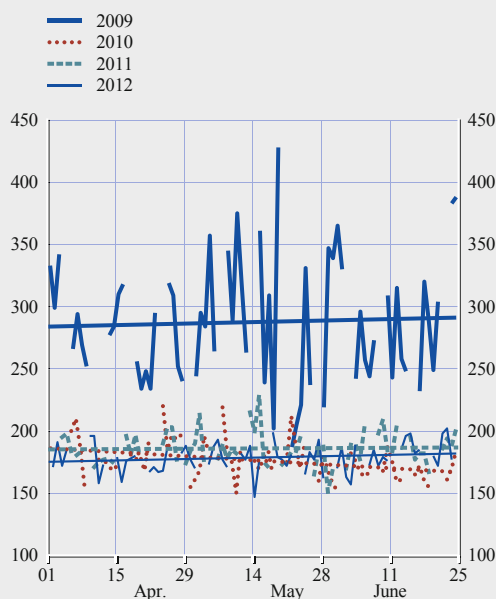
<sup>3</sup> An overall liquidity increase or decrease might trigger a shortening or lengthening of the payment queues and therefore a different employment of the algorithms.

of the other participants; after 2009 these participants reduced their average daily number of changes to the reservations, introducing a lower and less volatile trend.

The analysis of how the TARGET2 liquidity-saving features have been used so far represents one side of the coin. The other side is represented by the outcome of simulations of “what if...” scenarios whereby the liquidity features can be modified or deactivated. For such simulations, the TARGET2 operators in charge use the TARGET2 simulator, in which a full week of settlement business can be simulated in less than two hours. A group of experts in this area is expected to draw some conclusions in the course of 2013 and hence some results may be reported in the next TARGET Annual Report.

For further information on the functioning of liquidity-saving features available in TARGET2, see also Box 3 of the TARGET Annual Report 2010 entitled “Liquidity-saving features and their use”, and the “Liquidity management” paragraph in Annex 1 to this report entitled “Features and functionalities of TARGET2”.

**Chart B Daily number of reservation changes in TARGET2**



Source: ECB.

## 1.5 NIGHT-TIME SETTLEMENT IN TARGET2

While TARGET2 operates from 7 a.m. until 6 p.m., it also offers the possibility to settle payments during the night, i.e. outside the regular opening hours. This service is, however, exclusively limited to those ancillary systems that connect via the Ancillary System Interface (ASI). Other operations such as bank-to-bank transactions or customer payments are not allowed during the night. There are two night-time settlement windows: 7.30 p.m. to 10 p.m. and 1 a.m. to 6.45 a.m. The two windows are separated by a technical maintenance window, during which no settlement operations are allowed. During the night ancillary systems settle groups of transactions (credit transfer and direct debit operations) through the “ASI procedure 6”, via dedicated liquidity accounts<sup>9</sup>.

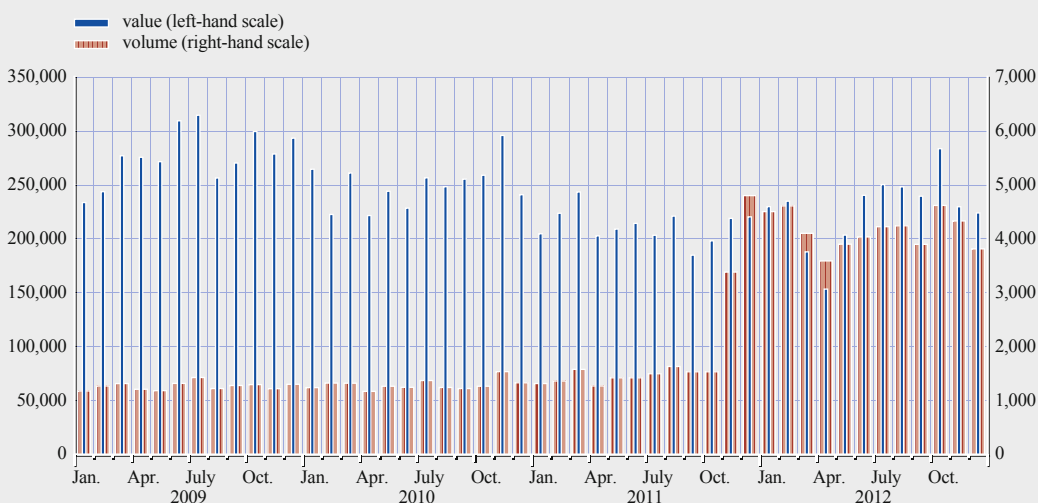
The fact that at night the system is closed to any other form of payments processing allows ancillary systems to profit from stable and predictable liquidity situations, thereby settling their transactions efficiently and safely. On average, in 2012 around 10,000 payments representing a value of €210 billion were settled every day in TARGET2 during the night. In earlier years, the night 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>10</sup>.

<sup>9</sup> The dedicated accounts are created by setting aside the required liquidity in a specific sub-account (interfaced model) or on the mirror account managed by the ancillary system (integrated model).

<sup>10</sup> Directive 2007/64/EC on payment services in the internal market.

Chart 14 Night-time settlement in TARGET2

(number of transactions; EUR billions)



Source: ECB.

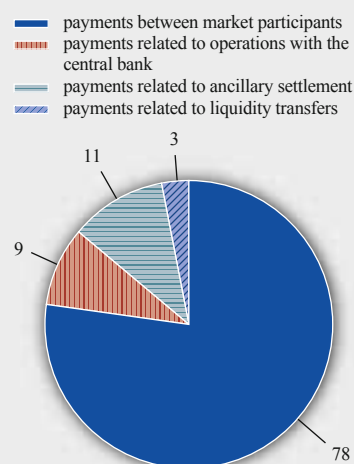
Chart 14 shows how the volumes and values settled in TARGET2 during the night have evolved since 2009. The increase in volume in November 2011 corresponds to a retail payment system in Germany starting to make use of the night settlement services in TARGET2. In 2012 securities settlement systems accounted for 36% of the night-time volume and 93% of the value, with the remainder accounted for by retail payment systems.

### 1.6 PAYMENT TYPES IN TARGET2

Charts 15 and 16 present the breakdown of the TARGET2 volumes and turnover by type of transaction. They cover 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<sup>11</sup>. As in previous years, more than three-quarters of the TARGET2 volumes are represented by payments to third parties, namely interbank traffic or customer payments. Operations with ancillary system settlement represent 11% of the total volume, 9% is generated through operations with the central bank, and the remaining share of 3% is linked to liquidity transfers.

Chart 15 Breakdown of TARGET2 volumes in 2012

(percentages)

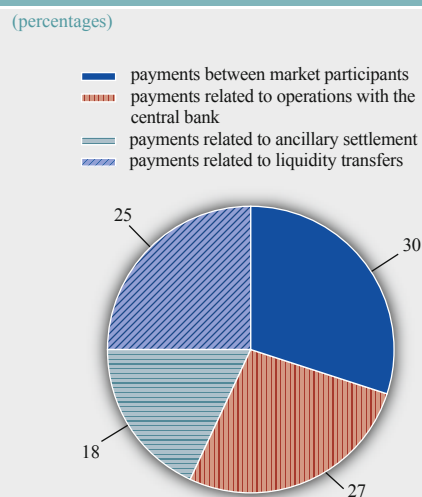


Source: ECB.

<sup>11</sup> A transaction will be seen as intragroup if it takes place between two accounts, the BICs of which start with the same eight characters, or if it takes place between two accounts that are part of the same liquidity pooling arrangement.

The composition of the TARGET2 turnover is visibly different, as payments between participants represent only 30% of the total turnover, followed by operations with the central bank, registering 27% of the total. The rest of the turnover results from liquidity transfers and operations with ancillary system settlement, representing 25% and 18% respectively. Compared with previous years, the composition of the TARGET2 volumes in 2012 remained relatively stable. However, as regards turnover, the share of the value generated as a result of transactions with central banks significantly increased from 16% to 27%, while payments between market participants decreased from 38% to 30%. These changes in the composition of the TARGET2 turnover mainly reflect the sharp decrease in money market transactions in 2012 and the higher level of overnight deposits compared with 2011.

**Chart 16 Breakdown of TARGET2 turnover in 2012**



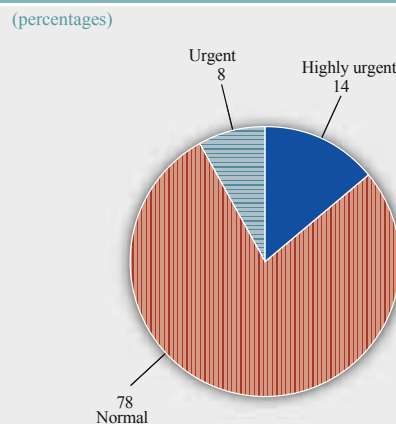
Source: ECB.

### 1.7 USE OF PRIORITISATION

When submitting payments in TARGET2, participants can assign them a specific priority: “normal”, “urgent” or “highly urgent”<sup>12</sup>. 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 certain 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 gives an overview of the use of priorities in TARGET2 in 2012. It shows that the vast majority of transactions, namely 78%, had normal priority, while only 8% and 14% were urgent and highly urgent respectively. This pattern has remained relatively stable since the beginning of TARGET2. Priorities are appropriately used in TARGET2 and no abuse seems to take place; in particular, banks only assign the urgent priority to a limited number of payments. Participants acknowledge the benefits of this feature, which supports them in the management of their liquidity.

**Chart 17 Use of priorities in TARGET2 in 2012**



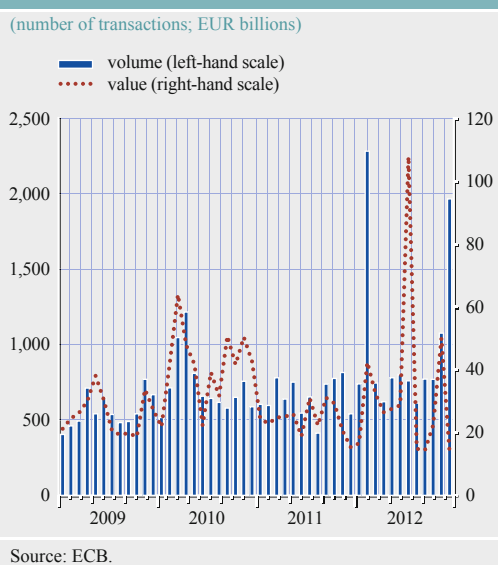
Source: ECB.

<sup>12</sup> “Highly urgent” can only be used in connection with operations with central banks or ancillary system settlement.

## 1.8 NON-SETTLED PAYMENTS

Non-settled payments in TARGET2 are those transactions that were not processed owing to a lack of funds or as a result of breaching the sender's limit at the time the system closed, and are ultimately rejected. Chart 18 shows the evolution of the daily average of non-settled payments between 2009 and 2012 in terms of both volume and value. In 2012, there were, on average, 994 non-settled transactions every day, valuing €35 billion, whereas in 2011, non-settled payments on the SSP amounted, on average, to a value of €24 billion per day. Overall, non-settled payments in 2012 represented 0.28% of the total daily volume and 1.4% 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.

Chart 18 Non-settled payments on the SSP



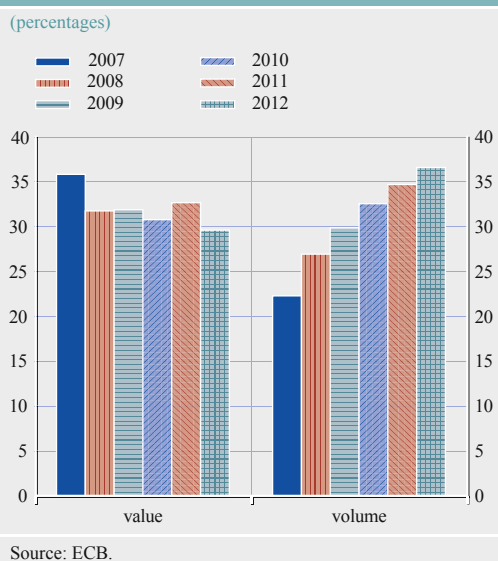
Overall, there was an increase in the number of non-settled payments in 2012, namely 34% in terms of volume and 27% in terms of value. These increases, however, should not be attributed to the lower levels of liquidity available in the system, as they result mainly from technical incidents on the side of single participants (for example, a payment message was sent with the wrong amount by the participant, which is subsequently cancelled in its queue).

## 1.9 SHARE OF INTER-MEMBER STATE TRAFFIC

In 2012 the share of inter-Member State traffic in TARGET2 (i.e. payments exchanged between participants belonging to different national banking communities) was 30% in value terms and 37% in volume terms. While the share of value reported in 2012 was lower than in 2011 (when it was 33%), the share of inter-Member State traffic in volume continued its steady increase, rising from 35% to 37%.

The lower share of recorded values in 2012 could be attributed to reduced activity on the inter-Member State money market observed over 2012. The stable increase in cross-border volumes indicates that TARGET2's migration to the SSP helped to further blur the distinction between *inter*-Member State and *intra*-Member State transactions. However, whether a payment

Chart 19 Share of inter-Member State traffic in TARGET2





is sent to or received from a given banking community may have more to do with the bank's internal organisation than the real geographical anchorage (see Box 1 on TARGET2 balances). For this reason, TARGET2 statistics published by the Eurosystem (within the scope of this report or on an ad hoc basis) refer less and less frequently to such a distinction.

### 1.10 SHARES OF NATIONAL BANKING COMMUNITIES

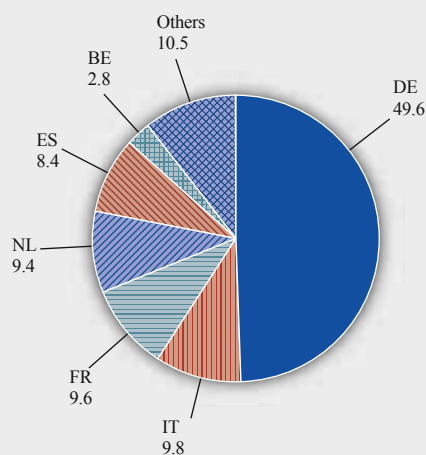
TARGET2 runs on a single platform from which it provides settlement services to all its participants, irrespective of the country from which they connect. However, it is still possible to break down the turnover and volume by national banking communities contributing to TARGET2 traffic.<sup>13</sup>

Chart 20 shows the contribution of the different banking communities to TARGET2 volumes in 2012. With the same share of nearly 50% as in the previous year, Germany remains the country in which TARGET2 volumes are most concentrated. Adding Italy, France, the Netherlands and Spain, this figure increases to 86.7%, i.e. the same level as observed in previous years (87.7% in 2010 and 86.6% in 2011).

Chart 21 shows the share of turnover that the different banking communities settled in TARGET2 in 2012. In the interests of legibility, only those countries representing more than 2% of overall TARGET2 turnover are shown. As in previous years, the system's activity was highly concentrated in a small number of banking communities. Five countries – Germany, France, the Netherlands, Spain, and Italy – were the main contributors to TARGET2 turnover and together accounted for 83.9% of the value exchanged. Overall, in comparison with previous years, the concentration of turnover in five countries remains stable.

**Chart 20 Contribution to TARGET2 volume in 2012**

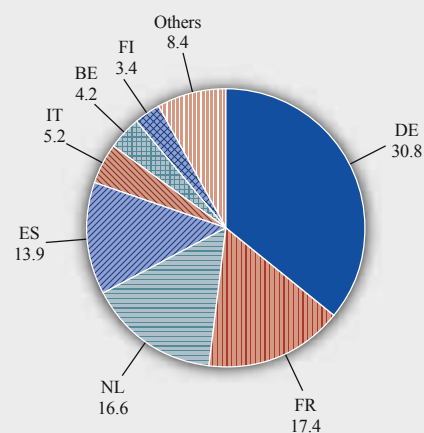
(percentages)



Source: ECB.

**Chart 21 Contribution to TARGET2 turnover in 2012**

(percentages)



Source: ECB.

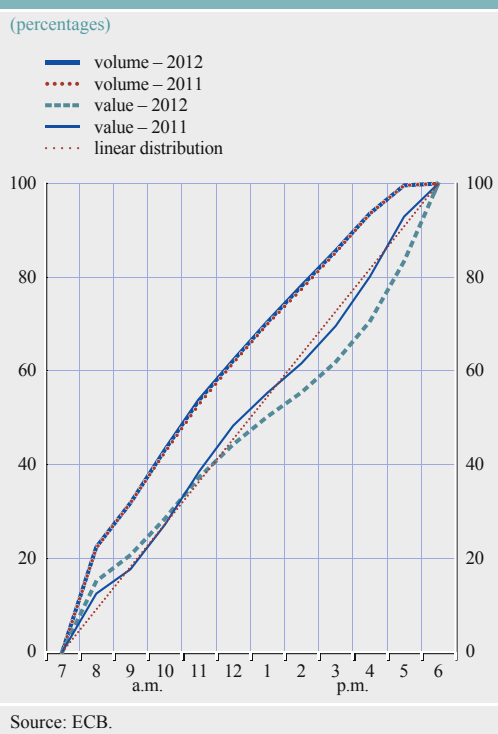
<sup>13</sup> "TARGET2 national banking community" refers to the NCB with which a financial institution holds its account. For example, a French bank that has its account with the Deutsche Bundesbank will contribute to the German share. Moreover, it should be noted that TARGET2 statistics count the debit side of a transaction (i.e. the sending of a credit transfer and the receipt of a direct debit).

It should be noted that the high concentration of both TARGET2 values and volumes in certain countries does not only result from 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.

### 1.11 PATTERN OF INTRADAY FLOWS

Chart 22 shows the intraday distribution of TARGET2 traffic, i.e. the percentage of daily volumes and values processed at different times of the day. 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.

Chart 22 Intraday distribution of TARGET2 traffic



In value terms, the curve has typically been very close to a linear distribution, indicating an even spread throughout the day, which in turn ensures the smooth settlement of TARGET2 transactions. Thus, such a regular distribution of the settlement activities throughout the day, without any strong peak, is a very important asset of TARGET2, as it prevents a concentration of risk at certain times of the day.

In 2012 the trend of the average value distribution over the day changed, with 50% of the value exchanged in TARGET2 settled by 1 p.m. CET, and 83% by one hour before the end of the day. In comparison with previous years, this higher share of settled volumes at the end of the day could be associated with, as already mentioned, the high recourse to the ECB deposit facility throughout 2012, i.e. activity that occurs predominantly in the last hours of the working day.

In volume terms, the curve is well above the linear distribution, with 22% of transactions being submitted to the system by one hour after the start of operations, which include transactions sent during the night by participants and warehouse payments, and 43% by three hours after the start. By one hour before the system closes, 99.6% of the TARGET2 volumes have already been processed. A comparison with previous years does not show significant deviations.

### 1.12 TRANSITION PERIOD

In 2005 the Governing Council of the ECB agreed on a maximum transition period of four years after the migration to TARGET2 for the settlement of transactions between market participants and transactions stemming from ancillary system settlement, as well as payments related to open market

operations in the central banks' local proprietary home accounts (PHAs). Since the completion of the migration in May 2008, all central banks have phased out their PHAs, with the exception of the Deutsche Bundesbank, which is scheduled to complete its phasing out in 2013.

At the TARGET2 level, the number of transactions settled in the PHAs represented 0.7% of total traffic in 2012. This confirms that settlement activities in the PHAs were marginal and that, in practice, the fragmentation of participants' liquidity between the SSP and the PHAs had limited and manageable effects. With the phasing out of the German PHA, the technical consolidation of all payment settlement activities on the Single Shared Platform of TARGET2 will be achieved.

## 2 TARGET2 SERVICE LEVEL AND AVAILABILITY

### 2.1 PROCESSING TIMES

In 2012 99.98% of the payments settled on the payment module of TARGET2 were processed in less than five minutes (99.85% in 2011). For 0.02% of the transactions, the processing time was between five and fifteen minutes (0.08% in 2011), and no payment needed more than fifteen minutes for processing (0.07% in 2011).

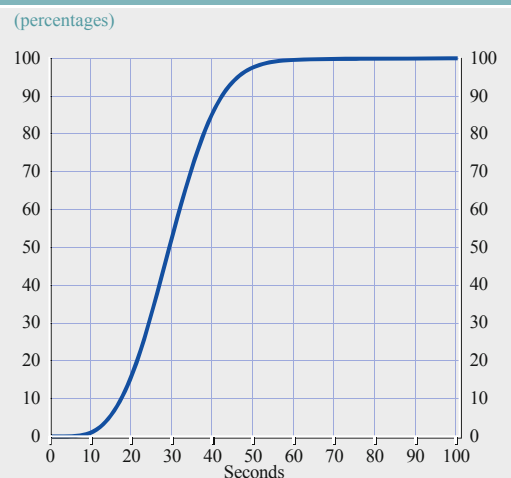
Compared with the figures for the previous year, there was an improvement on the service and the processing times of payments, confirming the high performance level of the SSP of TARGET2. This good performance is very beneficial for the banking community, in particular when taking into account the real-time management of their liquidity.

The processing times of payments are only measured for payments settled on the SSP. Payments settled on the PHAs are excluded from this reporting. 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, meaning that the statistics on processing times apply to around 70% of the system's traffic.

With regard to other requests or enquiries,<sup>14</sup> 99.99% (99.97% in 2011) were processed in less than one minute and only 0.01% (0.03% in 2011) in one to three minutes.

Chart 23 helps to better quantify the system's performance by providing the distribution of processing times on the SSP, i.e. the percentage

**Chart 23 Processing times on 21 December 2012, excluding first hour**



Source: ECB.

<sup>14</sup> This figure covers the InterAct messages received by the SSP, both in U2A and A2A mode.

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, 21 December 2012, when 527,326 payments were settled. The chart shows that, on that day, 50% of the transactions were settled within 29 seconds and 90% within 42 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) are 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 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 and automatically puts critical payments at the top of the queue. 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 1 on the use of prioritisation).

## 2.2 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 achieved 100% (99.89% in 2011) technical availability over the reporting period. The decrease in 2011 was due to a major incident on 25 July 2011 when the system was unavailable for about three hours.

Technical availability is measured on TARGET2 business days, during the day trade phase 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 system settlement in TARGET2). The availability measurement does not include systems or networks not directly managed by TARGET2 (in particular, the availability of the SWIFTNet services), nor does it include incidents that occur during night-time settlement.

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.

## 2.3 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.<sup>15</sup> The aim of this approach is to learn from these events in order to avoid a recurrence of the incidents or incidents of a similar nature and to improve monitoring capabilities.

It is worth mentioning two incident categories in particular, even though they did not affect the availability indicator for TARGET2 in 2012.

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 availability indicator of TARGET2. In 2012 the following incidents fitted into this category.

- On 4 January in the afternoon the information and control module (ICM) experienced a brief interruption of service. The service was reactivated within half an hour and a couple of ancillary system messages were delayed by a few minutes.
- On 31 January the delivery of ancillary system notification messages to eight ancillary systems was delayed by about 15 minutes, owing to maintenance activities. The ancillary system settlement itself was not delayed.
- On 28 August in the afternoon the ICM was unavailable for about 45 minutes, owing to connectivity problems. There was no impact on other traffic.
- On 14 November some outgoing confirmation messages were delayed for about 50 minutes, following a failure affecting two SSP components linking the SSP to the SWIFT network. Settlement was not affected – there were only some delays for debit confirmation messages.

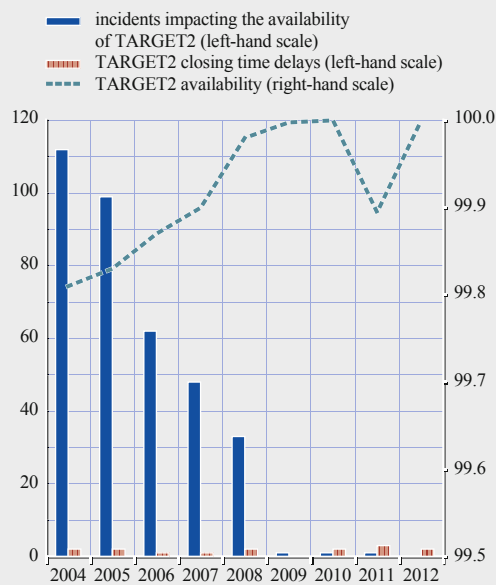
Second, although not included in the performance indicators, incidents during night-time settlement are reported transparently and followed up accordingly. In 2012 the following incidents fitted into this category.

- On 25 May a software component responsible for the delivery of incoming messages was blocked for about one hour and prevented the forwarding of settlement instructions during night-time settlement.

<sup>15</sup> In 2012 six incidents affected payment processing in a PHA, however none of these incidents affected the overall availability of TARGET2.

**Chart 24 TARGET2 incidents and delays in closing**

(number of incidents; percentages)



Source: ECB.

- On 11 June, owing to a delay in the end-of-day/start-of-day procedures, the night-time settlement phase started with a delay of 10 minutes.
- On 19 July, before the start of the new business day, a software problem at the operating system level caused interruptions of all ICM connections. This led to a delayed start of the new business day by 15 minutes.
- On 26 October the new business day for 29 October could not be opened automatically, owing to the preparation of a maintenance activity that was planned for the weekend. The consequence was that the ancillary system night business started with a ten-minute delay.
- On 18 December internet-based participants were not able to enter credit transfers for a period of five hours.

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

Finally, in 2012 none of the above-listed incidents caused a delayed closing of TARGET2. The system closed at 6 p.m. on all business days.

### 3 TARGET2 PARTICIPANTS

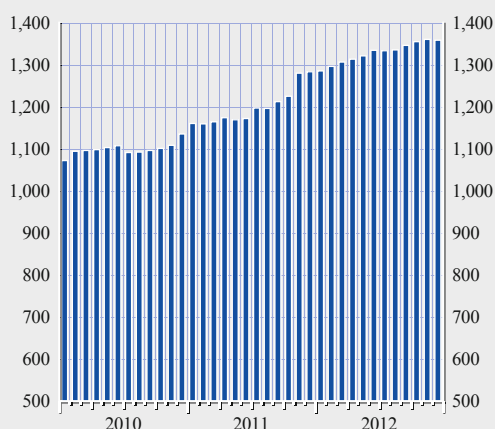
#### 3.1 RTGS ACCOUNTS

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, 75 new RTGS accounts were opened in 2012. At the end of the year the total number of RTGS accounts in TARGET2 was 1,359. The increase in 2012 resulted mainly from the phasing-out of activity on local PHAs, which led some PHA users that were not yet direct participants in TARGET2 to open RTGS accounts on the SSP, with the option of accessing TARGET2 via the internet as an alternative to connecting via SWIFT. The positive impact of the phasing-out of local PHAs on participation levels in TARGET2 is expected to be particularly visible in 2013, as at the end of September 2013 the German PHA, which is the last one still functioning and which is significant in terms of volume and value, will cease to exist.

#### 3.2 PARTICIPATION TYPES

At the end of December 2012, 999 direct participants held an account on the SSP of TARGET2. Via these direct participants, 3,386 indirect participants from the European Economic Area (EEA) could settle their

Chart 25 Number of RTGS accounts in TARGET2



Source: ECB.

transactions in TARGET2, as well as 13,313 correspondents worldwide. When the branches of direct and indirect participants are included, a total of 57,140 credit institutions around the world were accessible via TARGET2 at the end of 2012. In comparison with 2011, the number of indirect participants was lower by 79, which reflects the changes in the classification of TARGET2 participant types introduced at the end of 2012 together with a new pricing schedule. The changes implemented in 2012 allow for a better distinction to be made between indirect participants using TARGET2 via their head offices and indirect participation provided by direct participants to third parties. A similar but even more visible decrease in registered indirect participants is also expected to be observed in 2013.

**Table 2 Participation types**

|  |        |
|--|--------|
| Direct participation                             | 999    |
| Indirect participation                           | 3,386  |
| Multi-addressee – credit institution             | 32     |
| Multi-addressee – branch of direct participant   | 1,548  |
| Addressable BIC – correspondent                  | 13,313 |
| Addressable BIC – branch of direct participant   | 30,726 |
| Addressable BIC – branch of indirect participant | 7,136  |

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 neither addressable by third parties nor 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 214 of these accounts, also called “unpublished BICs”, at the end of 2012.

### 3.3 ANCILLARY SYSTEMS

At the end of 2012 a total of 82 ancillary systems were settling on the TARGET2 SSP, of which 36 were retail payment systems/clearing houses, 31 were securities settlement systems and 15 were central counterparties. This is a slight increase in number compared with 2011 (when there were 80 ancillary systems in total).

Of the 82 ancillary systems settling on the SSP, 62 were making use of the ASI, a feature which was developed to facilitate and harmonise the cash settlement of these systems in TARGET2. The number of times the six available ASI models were used is shown in Table 3.

**Table 3 ASI settlement model**

|  | Number of times used |
|--|----------------------|
| Model 1 – liquidity transfer                   | 4                    |
| Model 2 – real-time settlement                 | 19                   |
| Model 3 – bilateral settlement                 | 22                   |
| Model 4 – standard multilateral settlement     | 22                   |
| Model 5 – simultaneous multilateral settlement | 14                   |
| Model 6 – dedicated liquidity                  | 23                   |

Note: 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.

Box 3

## CRITICAL PARTICIPANTS IN TARGET2

### Regulatory requirements

As stipulated in the “Core Principles for Systemically Important Payment Systems” drawn up by the Committee on Payment and Settlement Systems (an international standard-setting body for payment, clearing and securities settlement systems), the security and operational reliability of a payment system not only relies on the components of the central system, but is also connected with the functioning of the components of the system’s participants (Core Principle VII).<sup>1</sup> Thus, as the technical failure of critical participants in the system may induce systemic risk, established international and Eurosystem oversight rules require that the operators and owners of the systemically important payment systems ensure that critical participants are properly identified and that they meet high security policy standards and have high operational service levels.

### Definition of criteria

Currently, the distinction between critical and non-critical participants in TARGET2 is based on the participants’ market share in terms of value and/or the type of transactions processed – factors which determine the impact of a potential security failure affecting the systems of financial institutions.

TARGET2 participants can be broken down into two main groups: credit institutions and ancillary systems. For each group, criteria were defined to identify which participants should be considered critical.

As far as ancillary systems are concerned, they not only play a major role in TARGET2 with respect to both the safety and the efficiency of the financial system, but they are also crucial for citizens’ confidence in the euro. For that reason, all ancillary systems – except retail payment systems, which are not classified as systematically important – are considered to be critical participants.

With regard to credit institutions, in theory the distinction between a critical and non-critical credit institution would be based on the contribution of that credit institution to the system’s turnover. In practice, a credit institution is classified as critical for TARGET2 if it consistently settles at least 2% of the system’s turnover on a daily basis.

### Assessment of TARGET2 criticality indicators

The above-described criteria for the identification of critical credit institutions, initially specified in 2009, are under continuous review and analytical assessment. The ongoing studies aim, among other things, to evaluate and potentially redefine existing measures in order to reflect as accurately as possible the criticality of TARGET2 participants. Other indicators are currently being analysed which may complement or replace the current ones.

<sup>1</sup> It should be mentioned that, in the future, the core principles will be replaced by the CPSS-IOSCO principles for financial market infrastructures, of which the corresponding principle here would be principle 17, key consideration 7.



While the preliminary results of these studies confirm the applicability of the existing parameters for the assessment of TARGET2 participant criticality, they also suggest a need for further streamlining of the parameters and for the inclusion of additional elements (for example indicators measuring the impact of a technical failure of one participant on the overall TARGET2 flows by means of simulations).

Once confirmed by further analysis, changes to the existing assessment of critical participants could be included in the next evaluation round in 2014.

### Requirements for critical participants

The Eurosystem has set up a number of requirements that critical participants have to meet in order to provide reasonable assurance that the information security of their internal systems is appropriately addressed. Moreover, fulfilment of these requirements should ensure that the operational failure of a participant's component will not have an adverse impact on the TARGET2 system as a whole, or on other participants.

The requirements specified by the Eurosystem stipulate that critical participants must assess the security of their interface that connects to TARGET2. This also applies to components beyond this interface, which are of crucial importance for the smooth flow of payments.

In addition to compliance with security standards, critical participants must have a business continuity strategy in place that comprises business continuity plans, an alternative site with related contingency procedures, and a business continuity testing strategy.

TARGET2 participants classified as critical need to confirm compliance with these requirements by means of a specially prepared document, called a "Self-certification statement" (see Annex III to the Information guide for TARGET2 users).

## 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 both on the SSP and on the PHAs<sup>16</sup> of the NCBs. Based on 2012 figures, the following observations can be made.

The SSP alone generates 99% of overall TARGET2 revenues, while local PHAs account for the remaining part. This is roughly in line with the distribution of volumes, as the SSP contributes the same proportion to overall TARGET2 traffic.

89% of the direct participants in the SSP opted for the flat fee option (i.e. option A), while 11% opted for the degressive fee option (i.e. option B).<sup>17</sup> This illustrates that TARGET2 is still capable

<sup>16</sup> These cover bank-to-bank payments, as well as ancillary system settlement and open market operations.

<sup>17</sup> Option A (i.e. a monthly fee of €100 and a flat transaction fee of €0.80) is intended for small and medium-sized institutions submitting less than 5,750 TARGET2 transactions per month. For institutions making greater use of TARGET2, option B (i.e. a monthly fee of €1,250 and a degressive transaction fee of between €0.60 and €0.125) is proposed.

of attracting both the major players in the euro area and, at the same time, 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 70% of the TARGET2 revenues.<sup>18</sup> As a result of this concentration effect, 30% of all SSP transactions were priced at the lowest pricing band, i.e. €0.125. This demonstrates that key participants, in particular multi-country banks, benefited from the attractive degressive fee option offered by TARGET2 and from the competitive group pricing offers.<sup>19</sup>

Transactions exchanged between credit institutions generate around 90% of TARGET2 volumes, with the remaining 10% attributable to ancillary system transactions.

85% of the TARGET2 revenues were variable, i.e. came from transaction fees, while fixed subscription fees accounted for 15%.

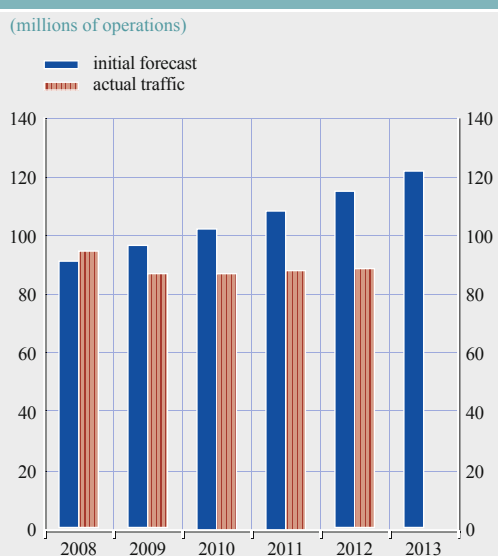
## 4.2 COST RECOVERY OBJECTIVES

The objective initially set by the Governing Council of the ECB in 2007 was that TARGET2 should recover all 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 1.5% (see Chart 26).

Against this background, the Eurosystem decided to amend the single pricing scheme of TARGET2 (see Box 4). The following changes entered into force on January 2013:

- an increase in the monthly fixed fee for RTGS accounts of €50 for participants under option A, i.e. paying a flat transaction fee, and of €625 for participants under option B, i.e. paying a degressive transaction fee;

Chart 26 TARGET2 yearly traffic compared with initial forecast



Source: ECB.

<sup>18</sup> These are accounted for by core pricing participants, central banks using ASI for “other purposes”, ancillary systems and liquidity pooling.

<sup>19</sup> Some specific features of TARGET2 (e.g. liquidity pooling or multi-addressee access) offer the possibility of applying the degressive transaction fee to all payments initiated from accounts belonging to the same group.

- the introduction of a monthly fee<sup>20</sup> for indirect participants and correspondents of €20 and €5 respectively.

By applying this new scheme, the Eurosystem anticipates that full cost recovery for TARGET2 will be achieved after eight and a half years, rather than six. The Eurosystem believes that 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 become more favourable, the Eurosystem will carefully reconsider, taking into account the expected costs of TARGET2 migration to ISO 20022 in 2017, the single pricing scheme of TARGET2.

#### Box 4

### PRICING SCHEME FOR TARGET2 CORE SERVICES APPLICABLE AS OF 1 JANUARY 2013

| Core pricing scheme for direct participants                |                    |           |              |           | Previously | Core pricing scheme for ancillary systems                      |         |                         |                   |                    | Previously |  |
|--|--------------------|-----------|--------------|-----------|------------|--|---------|-------------------------|-------------------|--------------------|------------|--|
| <b>Option A</b>  |                    |           |              |           |            | <b>1) Fixed fee I (monthly flat rate per ancillary system)</b> |         |                         |                   |                    |            |  |
| Monthly fee  |                    |           |              |           | €150       | €100   |         |                         |                   | €1,000             | unchanged  |  |
| Flat transaction fee                                       |                    |           |              |           | €0.80      | unchanged  |         |                         |                   |                    |            |  |
| <b>Option B</b>  |                    |           |              |           |            | <b>2) Fixed fee II (based on daily underlying gross value)</b> |         |                         |                   |                    |            |  |
| Monthly fee  |                    |           |              |           | €1,875     | €1,250   |         | <b>EUR millions/day</b> | <b>Annual fee</b> | <b>Monthly fee</b> |            |  |
| Degressive transaction fee:                                |                    |           |              |           |            |  |         |                         |                   |                    |            |  |
| <b>Band</b>  | <b>Volume from</b> | <b>to</b> | <b>Price</b> |           |            |  |         |                         |                   |                    |            |  |
| 1  | 1                  | 10,000    | €0.60        | unchanged |            | 0-1,000  | €5,000  | €417                    | unchanged         |                    |            |  |
| 2  | 10,001             | 25,000    | €0.50        | unchanged |            | 1,001-2,500  | €10,000 | €833                    | unchanged         |                    |            |  |
| 3  | 25,001             | 50,000    | €0.40        | unchanged |            | 2,501-5,000  | €20,000 | €1,667                  | unchanged         |                    |            |  |
| 4  | 50,001             | 100,000   | €0.20        | unchanged |            | 5,001-10,000   | €30,000 | €2,500                  | unchanged         |                    |            |  |
| 5  | above 100,000      |           | €0.125       | unchanged |            | 10,001-50,000  | €40,000 | €3,333                  | unchanged         |                    |            |  |
|  |                    |           |              |           |            | Above 50,000   | €50,000 | €4,167                  | unchanged         |                    |            |  |
| <b>Core pricing scheme for internet-based participants</b> |                    |           |              |           |            | <b>3) Transaction fee</b>                                      |         |                         |                   |                    |            |  |
|  |                    |           |              |           |            | <b>Option A</b>  |         |                         |                   |                    |            |  |
| Fixed monthly fee  |                    |           |              |           | €70        | unchanged  |         |                         |                   |                    |            |  |
| Monthly fee for RTGS account                               |                    |           |              |           | €150       | €100   |         |                         |                   |                    |            |  |
| Flat transaction fee                                       |                    |           |              |           | €0.80      | unchanged  |         |                         |                   |                    |            |  |
|  |                    |           |              |           |            | <b>Option B</b>  |         |                         |                   |                    |            |  |
| Monthly fee  |                    |           |              |           |            |  |         |                         |                   | €1,875             | €1,250     |  |
| Degressive transaction fee:                                |                    |           |              |           |            |  |         |                         |                   |                    |            |  |
| <b>Band</b>  | <b>Volume from</b> | <b>to</b> | <b>Price</b> |           |            |  |         |                         |                   |                    |            |  |
| 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 |            |  |         |                         |                   |                    |            |  |

20 This fee will not apply to branches of direct participants, branches of indirect participants, branches of correspondents or entities belonging to the same banking group (according to the definition of a banking group provided in the TARGET2 Guideline (ECB/2012/27)).

| Type of participation   | Fee               | Frequency | Description  | Previously     |
|---|-------------------|-----------|--|----------------|
| Direct participation  | €150 or<br>€1,875 | monthly   | Depending on the chosen scheme   | €100 of €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 indirect participant  | one-off        |
| Addressable BICs – correspondents   | €5                | monthly   | Direct participant is charged for each 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* | €5                | one-off   | Direct participant is charged for each registration of an 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      |

| Fees for liquidity pooling service (optional)                | Previously        |
|--|-------------------|
| Consolidated account information option (yearly per account) | € 1,200 unchanged |
| Aggregated liquidity option (yearly per account)             | € 2,400 unchanged |

## 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. In order to meet this responsibility, the Eurosystem has established a comprehensive risk management<sup>21</sup> framework comprising, among other things, a fact-finding analytical part, as well as dynamic elements, to ensure that information security is continuously monitored and maintained throughout the life cycle 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 recurring; 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 in order 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 with regard to the implementation of mitigating measures listed in the action plans is monitored to ensure that satisfactory progress is being made.

21 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).

In conclusion, the consistent use of the TARGET2 risk management framework reassures the Eurosystem, as well as TARGET2 users, that the overall security situation in TARGET2 is kept at a satisfactory level. In this context, it is worth mentioning that incidents which occurred in 2012 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

TARGET2 is overseen by the ECB, which has the leading and coordinating role, and by participating NCBs. The latter remain responsible for the oversight of the local features of TARGET2 and contribute to the oversight of the central features of the system (i.e. the SSP) on a “no compulsion, no prohibition” basis.

In 2012 the TARGET2 oversight activities included the monitoring of the operational performance of TARGET2, the monitoring of TARGET2 compliance with previously issued oversight recommendations, and preparations for the application to TARGET2 of the new “Principles for financial market infrastructures” drawn up by the Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO).

A workshop on these principles was organised in May 2012 for TARGET2 overseers and operators in order to ensure a common understanding of the new requirements and their application to TARGET2.

During the comprehensive assessment of TARGET2 whether the design complied with the Core Principles for Systemically Important Payment Systems, an issue was found concerning the mobilisation of additional collateral in contingency situations. This issue was closed in December 2012.

Furthermore, as part of the oversight activities, an assessment was begun of the changes included in the SSP releases 6.0 and 7.0, which are scheduled for implementation in November 2013.

Moreover, in 2012 the regular oversight activities of TARGET2 continued. For the most part, they covered the monitoring of the system’s performance, including the analysis of incidents, statistical data and information on the risk situation.

A major task initiated in 2012 was the analysis of interdependencies between TARGET2 and other financial market infrastructures, which focuses on system-based, institution-based and environmental-based interdependencies and their potential risks for TARGET2.

The NCBs of Germany and Greece continued to report on the performance of their PHAs in 2012. In the second quarter of 2012 the Greek PHA ceased its operations for bank-to-bank transactions, ancillary system settlement and open market operations. Only liquidity transfers and cash operations continued to be performed in the Greek PHA. The German PHA performed well in 2012. In the first half of the year, as part of its oversight activities, the Deutsche Bundesbank monitored the preparations for the third phase of the TARGET2 transition period.

Considering the results of all the above-mentioned assessments and taking into account the stable operational performance of TARGET2 throughout 2012, the overseers concluded that the overall risk situation of TARGET2 was satisfactory.

## 6 SYSTEM EVOLUTION

The SSP release 6.0, which was foreseen for November 2012, was rescheduled with the agreement of the TARGET2 user community, as it was deemed that the effort required to issue a new release would have been disproportionately large compared with the added value of the release itself, owing to its very limited content. Therefore, it was decided to incorporate release 6.0 in the major release 7.0, which is foreseen for November 2013, and which will feature the adaptation of TARGET2 for interaction with TARGET2-Securities (T2S).

The preparatory activities for the phasing-out of the German PHA were carried out during 2012, with a focus on the internal testing of the Deutsche Bundesbank. Following a period of testing with the German participants, the end of the “transition period” is now foreseen for September 2013. As a result of this phasing-out, the number of TARGET2 participants is expected to increase by a few hundred in 2013.

In 2012 the review of the strategy for migrating TARGET2 to a new set of payment messages compliant with ISO 20022 was approved. The date for the migration is November 2017. More information can be found in Box 5 below.

### Box 5

#### ISO 20022 MIGRATION STRATEGY

ISO 20022 has been discussed among payment traffic specialists for several years now, but owing to its technicality few people have a concrete idea of what it is about and the benefits it promises to bring to the financial services industry.

Now, as in the past, the creation of standards for the exchange of information among financial actors is driven by the necessity of managing an ever-growing amount of data in a reduced time, giving rise to the need to agree on syntax and semantics in a structured way, that is to agree on a common understanding of the shared information so as to eliminate the need for any human intervention in the interpretation of the messages. Structured formats and their meaning in terms of financial transactions have been created across different regions and business areas.

ISO 20022 is not like any of these standards: it does not feature any particular syntax (although many people might identify XML as its language because it is currently the most widely used in the financial industry) and it does not provide a new “vocabulary” per se. ISO 20022 is essentially a standard for creating standards; it has sometimes been referred to as a “recipe” for creating financial messaging standards. It provides a methodology for this purpose which is essentially based on the creation of a business model, with a definition of the business processes and the usage of a common repository with a related standardised and reusable dictionary of business components.

This methodology, if consistently applied, brings down the barriers to a common understanding of financial messages; in other words, it promises “interoperability” of different platforms. This is the reason why, in countries like Japan and Switzerland, the migration of their RTGS

systems to newly created ISO-compliant messages has already been planned. This is also why the Eurosystem has decided to migrate TARGET2 to ISO 20022.

The T2S project has been central in pushing TARGET2 to adopt a new set of ISO 20022-compliant messages: its early and exclusive adoption of the ISO 20022 standard has necessitated an ability on the part of TARGET2 to at least manage its messages for the exchange of information between the two platforms. Yet, the aim of the new strategy for TARGET2 approved in October 2012 is not only to interface with T2S: the project aims to totally replace the “old” set of messages with a new one overnight (with what has been called a “big bang” approach). It constitutes a move from SWIFT FIN messages to their (still to be developed) ISO 20022-compliant SWIFTNet MX equivalents, used in a way that ensures full compatibility with the legacy standards, with what SWIFT calls a “like-for-like” approach. This means that, even though the new messages are potentially able to deliver a much wider content compared with the current ones, they will be limited in that the tags of old and new messages will correspond in a one-to-one relationship, while respecting the format.

For a system of the magnitude of TARGET2, there are few projects as ambitious as one aiming to change the whole set of payment messages in one fell swoop, especially if, at the moment the migration strategy is approved, the new set of messages still needs to be created.

Naturally, this will be achieved at the end of a series of preparatory activities which will be carried out over a period of years, with the close involvement of the user community. The Eurosystem has announced that the new set of messages will be launched in November 2017 and this deadline, along with the details of the ISO 20022 strategy for TARGET2, has been presented to the financial world in the context of Sibos, the annual banking and financial conference organised by SWIFT, which in 2012 took place in Osaka, Japan. The strategy is the outcome of extensive discussions and consultations with the banking communities. The Eurosystem attaches great importance to the feedback of the industry on projects of such magnitude. For that reason, users will also be consulted on the implementation details.

Yet, the migration in 2017 will not be the end of the story: after the implementation of the like-for-like MX messages, central banks will stand ready to work on further enrichment of these messages with the user community, in order to reap other benefits of the new set of messages. This will be done in the context of the regular change and release management procedures for TARGET2, which ensure that new technical developments meet evolving business requirements.

The migration to ISO 20022 has repeatedly been defined as a cornerstone in the development of TARGET2, and its fulfilment will confirm once again the prominent position of the SSP among the international payment systems, while at the same time securing its long-term sustainability.

## CHAPTER 2

### THE TARGET2 SYSTEM

#### I FROM THE FIRST-GENERATION TARGET SYSTEM TO TARGET2

##### I.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.

##### I.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>22</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.

<sup>22</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.



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>23</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 82 ancillary systems 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

<sup>23</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.

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 the second-generation TARGET system 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 5.01) was made available to the user community in October 2011.

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 5.0) was made available to the user community in September 2011.

### **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 previously been included in a “non-public Guideline on TARGET2”. These articles include, inter alia, the legal basis for the inter-NCB balances in TARGET2 (see also Box 1 of this report). 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.

The Guideline on TARGET2 provides the basis on which the NCBs establish their TARGET2 component systems, which are governed by their national legislation. It contains the main legal elements of TARGET2, including governance arrangements and audit rules.

### COMPLIANCE WITH ANTI-MONEY LAUNDERING RULES

Anti-money laundering requirements and sanctions have been increasingly in the news recently, with investigations in the United States into several prominent financial institutions and even reports that lawmakers wish to specifically address payment systems in future legislation. We would therefore like to take this opportunity to highlight the responsibilities of participants in TARGET2 regarding these important issues.

The main obligations with regard to the observation of anti-money laundering requirements and sanctions lie with the TARGET2 participants. This is clearly laid out in Article 39 of the Harmonised Conditions for Participation in TARGET2, in Annex II to the TARGET2 Guideline, which states that participants are expected to be aware of and to comply with all the relevant obligations in this respect. Some further details are given in part 3 of the Article, which deals with the responsibility of participants to observe any requirements applicable to them stemming from any sanctions regime. This responsibility is fully in line with the related EU legislation, which imposes the requirements on the entity making the payment on behalf of another, i.e. the “payment service provider”.

The anti-money laundering requirements in the EU are detailed in two specific pieces of legislation, Regulation (EC) No 1781/2006 of the European Parliament and of the Council of 15 November 2006 on information on the payer accompanying transfers of funds, and Directive 2005/60/EC of the European Parliament and of the Council of 26 October 2005 on the prevention of the use of the financial system for the purpose of money laundering and terrorist financing. Participants should note that, at the time of writing, both of these are being updated, with the adoption of new versions expected in the near future.

Sanctions are a rapidly changing field. Currently, the most significant implications arise from the sanctions on Iran, which impose specific reporting requirements on transactions over a certain size, in some instances requiring permission to be obtained from the relevant authorities for such transactions, and which forbid transactions with a specified wide range of individuals and companies.

In all such cases the responsibility for making all the necessary checks and obtaining any permission lies with the direct participant, even if the payments originate from an indirect participant.

In addition, with sanctions in general, there are some specific requirements for participants acting indirectly via the central bank. In this case, although ultimate responsibility falls on the NCB, the participant is expected to obtain any necessary authorisation and make the necessary checks, and to provide evidence of having done so to the NCB.

As a final point, it is worth pointing out that, as with most countries (including the United States), in Europe the payment system itself is not subject to these reporting requirements. While penalties on institutions which are found to breach anti-money laundering requirements and sanctions regulations are, in general, a matter for the national authorities, the NCBs could also exclude a participant from TARGET2 if these provisions were breached.

### 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>24</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.

In January 2009 Slovakia joined the euro area and Národná banka Slovenska connected to TARGET2. Furthermore, 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 18 euro area central banks (including the ECB)<sup>25</sup>, and six central banks from non-euro area countries.<sup>26</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 greatly improves 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 2012. 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.

<sup>24</sup> At the time, the Bank of England, Danmarks Nationalbank and Sveriges Riksbank.

<sup>25</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, and Estonia, which joined the euro area in January 2011.

<sup>26</sup> Denmark, Poland, Latvia, Lithuania, Bulgaria and Romania.

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<sup>27</sup>**

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 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 5.1) was made available to the user community on 19 November 2012.

#### **4.3 INFORMATION GUIDE FOR TARGET2 PRICING<sup>28</sup>**

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 a detailed guide to the billing principles for the various types of transaction.

<sup>27</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.

<sup>28</sup> This information guide serves as a reference document for pricing and billing issues, but does not confer any legal rights on operations or entities.

# ANNEXES

## I 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.

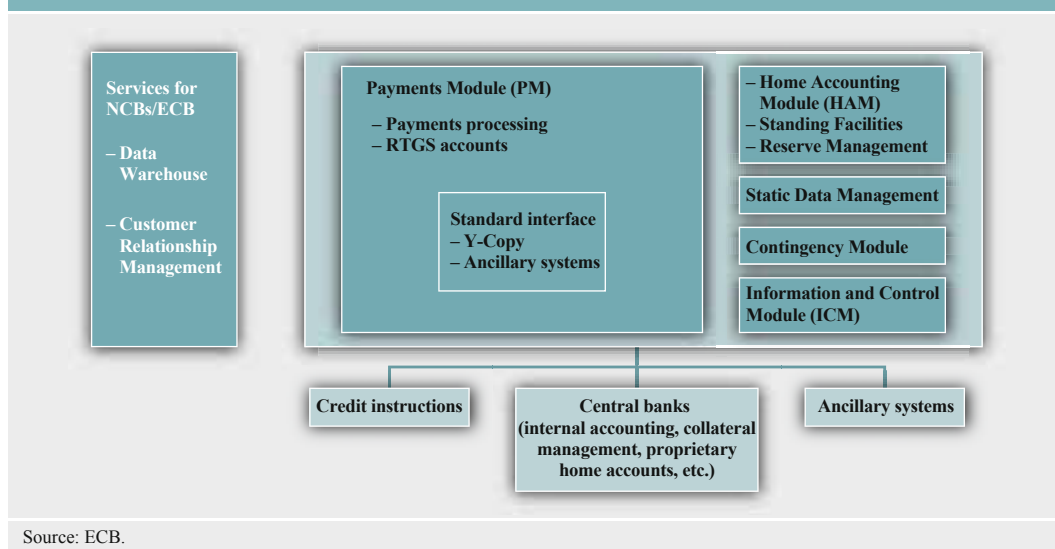
SWIFT standards and services (FIN, InterAct, FileAct and Browse) are used to enable standardised communication between the TARGET2 system and its participants. Since November 2010 a secured connection via the internet has been available for TARGET2 participants in addition to the SWIFT connection.

### 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 in each region there are two distinct sites. The principle of region rotation is applied, thus ensuring the presence of experienced staff in both regions.

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

Chart 27 Structure of the SSP



Source: ECB.

## 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. They are therefore able to: (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. Moreover, 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>1</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>2</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).

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. TARGET2 supports the SWIFTNet FIN payment types MT103/103+,

<sup>1</sup> For routing purposes, an indirect participant/addressable BIC can only be linked to one direct participant.  
<sup>2</sup> The TARGET2 Directory distinguishes between indirect participants and addressable BICs.

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 offsetting of payment flows (i.e. the use of algorithms to settle a number of queued payments). As in 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 moment. Such information is also provided in the aggregated liquidity option. However, in the consolidated account information option, payment amounts are only checked 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 with regard to the use 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 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.<sup>3</sup> 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.

## PRICING

The pricing scheme for TARGET2 core services valid until the end of 2012 was:

|                      |               |           |              |
|----------------------|---------------|-----------|--------------|
| <b>Option A</b>      |               |           |              |
| Monthly fee          |               |           | €100         |
| Flat transaction fee |               |           | €0.80        |
| <b>Option B</b>      |               |           |              |
| Monthly fee          |               |           | €1,250       |
| <b>Band</b>          | <b>Volume</b> |           | <b>Price</b> |
|                      | <b>from</b>   | <b>to</b> |              |
| 1                    | 1             | 10,000    | €0.60        |
| 2                    | 10,001        | 25,000    | €0.50        |
| 3                    | 25,001        | 50,000    | €0.40        |
| 4                    | 50,001        | 100,000   | €0.20        |
| 5                    | above 100,000 |           | €0.125       |

The liquidity pooling service (aggregated liquidity option and consolidated account information option) is an optional and separately priced core service. The fee for the liquidity pooling service is €1,200 per account per annum for the consolidated account information option and €2,400 per account per annum 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 degressive 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.

In addition, direct participants are charged a one-off registration fee of €20 for each registration of an indirect participant and €5 for each registration of an addressable BIC (including the BICs of branches of direct and indirect participants) in the TARGET2 Directory.

| Type of participation                    | Monthly fee per account/BIC  |
|--|--|
| Direct participation                     | €100 or €1,250 depending on the scheme chosen (see the TARGET2 core pricing scheme above)  |
| Multi-addressee access                   | €80 per BIC address in addition to the BIC of the account of the direct participant  |
| Unpublished account in the PM of the SSP | Direct participants which do not wish their BIC to be published in the TARGET2 directory will pay €30 per account (BIC) per month in addition to the monthly fee above |

<sup>3</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.

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).

| Fees            |         |  |       |
|-----------------|---------|--|-------|
| Fixed fee       | Monthly |  | €70   |
| PM account      | Monthly |  | €100  |
| Flat rate       |         |  | €0.80 |
| Optional fees   |         |  |       |
| Unpublished BIC | Monthly |  | €30   |

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

| 1 A) Monthly fee plus regressive transaction fee         |                    |            |                  | 1 B) Monthly fee plus flat transaction fee |              |  |
|--|--------------------|------------|------------------|--|--------------|--|
| Monthly fee:   |                    |            |                  | €1,250                                     |              |  |
| Band   | Volume (monthly)   |            | Transaction fee: | Flat rate transaction fee:                 | Monthly fee: |  |
|  | from               | to         |                  |  | €0.80        |  |
| 1  | 0                  | 5,000      | €0.60            |  |              |  |
| 2  | 5,001              | 12,500     | €0.50            |  |              |  |
| 3  | 12,501             | 25,000     | €0.40            |  |              |  |
| 4  | 25,001             | 50,000     | €0.20            |  |              |  |
| 5  | 50,001             |            | €0.125           |  |              |  |
| 2) Fixed fee I: (flat rate)                              |                    |            |                  | Monthly fee per ancillary system: €1,000   |              |  |
| 3) Fixed fee II: (based on daily underlying gross value) |                    |            |                  |  |              |  |
|  | (EUR millions/day) | Annual fee | Monthly fee      |  |              |  |
|  | 0-1,000            | €5,000     | €417             |  |              |  |
|  | 1,001-2,500        | €10,000    | €833             |  |              |  |
|  | 2,501-5,000        | €20,000    | €1,667           |  |              |  |
|  | 5,001-10,000       | €30,000    | €2,500           |  |              |  |
|  | 10,001-50,000      | €40,000    | €3,333           |  |              |  |
|  | Above 50,000       | €50,000    | €4,167           |  |              |  |

## 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 set 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, in order 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>4</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>5</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: it should not affect monetary policy; it should maintain a level playing field for all participants; and it should contribute to risk-reduction policies in payment systems.

With regard to operating times, it was decided that, in order to meet market and risk management needs, TARGET should have long operating hours and, in order 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. It was therefore decided, as a general rule, that TARGET would open at 7 a.m. and close at 6 p.m. CET.<sup>6</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 other days, the TARGET system would be open, although NCBs would be allowed to close their domestic systems during national holidays if so required by law or by the banking communities. The interlinking mechanism between open RTGS systems would remain open.

4 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)

5 EMI Annual Report 1996, April 1997.

6 *ibid.*

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>7</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 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>8</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. In order 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

<sup>7</sup> See also EMI Annual Report, May 1998.

<sup>8</sup> See also the ECB's press release of 10 June 1998.

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>9</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 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

On this day TARGET went live,<sup>10</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>11</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, in order 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>12</sup>

#### JULY 1999

Owing to rather 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

9 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.

10 For an overview of TARGET developments in 1999, see the ECB’s 1999 Annual Report, April 2000.

11 See also the ECB’s press release of 11 January 1999 and the March 1999 issue of the ECB’s Monthly Bulletin.

12 See also the ECB’s press releases of 3 September 1998 and 31 March 1999.

public holiday, the national RTGS system would remain open for limited domestic payment activity.<sup>13</sup>

#### 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 in order to safeguard the smooth transition of retail payment systems and internal bank systems to euro banknotes and coins.<sup>14</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>15</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 began participating in TARGET, bound by the same rules as the NCBs of the other participating Member States and the ECB.<sup>16</sup>

<sup>13</sup> See also the ECB's press release of 15 July 1999.

<sup>14</sup> See also the ECB's press release of 25 May 2000.

<sup>15</sup> See also the ECB's press release of 14 December 2000.

<sup>16</sup> See also the ECB's press release of 28 February 2002.



#### 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).<sup>17</sup> The TARGET Guideline, which came into force on 1 January 1999, 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 RTGS<sup>plus</sup>, 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>18</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) in order 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.

#### 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>19</sup>

17 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.

18 A negative PSMN provides the rejection code (reason for the rejection).

19 "TARGET2: Principles and structure".

## 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>20</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 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 in order 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 follow suit.

## 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

<sup>20</sup> "Summary of comments received on TARGET2: Principles and structure".

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 represents 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 having carried out 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. They 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 old and new standards, and the migration will take place in November 2017.

### 3 GENERAL TERMS AND ACRONYMS

#### 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      | CH | Switzerland    |

#### 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   |
| EUR, €   | Euro   |
| 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 |
| Forex    | Foreign exchange   |
| 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  |
| MT103+       | 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  |
| SEPA         | Single Euro Payments Area   |
| SFD          | Settlement Finality Directive   |
| SSP          | Single Shared Platform  |
| SSS          | Securities settlement system  |
| STP          | Straight-through processing   |
| SWIFT        | Society for Worldwide Interbank Financial Telecommunication                             |
| SWIFTNet Fin | Store and forward messaging service for financial institutions on the SWIFTNet platform |
| T2S          | TARGET2-Securities system   |
| T2IS         | TARGET2 Information System  |
| TARGET       | Trans-European Automated Real-time Gross settlement Express Transfer system             |
| TARGET2      | Second-generation TARGET system   |
| TCP/IP       | Transmission control protocol/internet protocol   |
| TWG          | TARGET Working Group  |
| UDFS         | User Detailed Functional Specifications   |
| WGT2         | Working Group on TARGET2  |

## 4 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.

**Application-to-application (A2A):** Direct communication between applications, a customer's back office and the information and control module (ICM) of the Single Shared Platform (SSP). Information and messages can be transferred to in-house applications for further use. Control activities are automated.

**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**.

**Bank 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.

**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.

**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.

**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.

**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.

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

**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.

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

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

**InterAct:** SWIFT messaging service that enables the interactive (real-time) and store-and-forward exchange of messages between parties.

**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.

**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.

**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.

**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**.

**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.

**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 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 PSMRs from the sending NCB/the ECB and payment settlement message notifications (PSMNs) (see above) from the receiving NCB/the ECB. The sender of the PSMR requests the receiver to process a payment; this message requires a positive or negative PSMN from the receiver.

**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 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 settlement 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 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).

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

**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.

**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.

**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.

**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.

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

**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.

**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.

**User-to-application (U2A):** Direct communication between a participant's users and the information and control module (ICM) of the Single Shared Platform (SSP). The information is displayed in a browser running on the personal computer concerned. Control activities are performed manually by the user.



## ADDITIONAL TABLES AND CHARTS

Distribution of payment flows in TARGET2

|              | 2012                                  |                        |                   |                        | 2011                                  |                        |                   |                        |
|--------------|---------------------------------------|------------------------|-------------------|------------------------|---------------------------------------|------------------------|-------------------|------------------------|
|              | Value<br>(EUR billions) <sup>1)</sup> | Percentage<br>of total | Volume            | Percentage<br>of total | Value<br>(EUR billions) <sup>1)</sup> | Percentage<br>of total | Volume            | Percentage<br>of total |
| AT           | 6,486                                 | 1.0                    | 1,717,949         | 1.9                    | 6,939                                 | 1.1                    | 1,617,473         | 1.8                    |
| BE           | 26,634                                | 4.2                    | 2,548,400         | 2.8                    | 27,207                                | 4.4                    | 2,638,198         | 2.9                    |
| BG           | 313                                   | 0.0                    | 140,818           | 0.2                    | 286                                   | 0.0                    | 105,201           | 0.1                    |
| CY           | 701                                   | 0.1                    | 156,910           | 0.2                    | 429                                   | 0.1                    | 132,313           | 0.1                    |
| DE           | 195,561                               | 30.8                   | 44,956,404        | 49.6                   | 210,260                               | 34.3                   | 44,431,306        | 49.6                   |
| DK           | 2,896                                 | 0.5                    | 200,343           | 0.2                    | 3,332                                 | 0.5                    | 197,100           | 0.2                    |
| EE           | 320                                   | 0.1                    | 92,099            | 0.1                    | 304                                   | 0.0                    | 84,640            | 0.1                    |
| ES           | 88,333                                | 13.9                   | 7,618,477         | 8.4                    | 94,391                                | 15.4                   | 7,583,861         | 8.5                    |
| EU           | 8,893                                 | 1.4                    | 141,671           | 0.2                    | 9,359                                 | 1.5                    | 97,351            | 0.1                    |
| FI           | 21,872                                | 3.4                    | 412,543           | 0.5                    | 12,101                                | 2.0                    | 403,646           | 0.5                    |
| FR           | 110,252                               | 17.4                   | 8,660,482         | 9.6                    | 102,300                               | 16.7                   | 8,773,644         | 9.8                    |
| GR           | 5,021                                 | 0.8                    | 1,109,668         | 1.2                    | 5,999                                 | 1.0                    | 1,506,157         | 1.7                    |
| IE           | 4,398                                 | 0.7                    | 1,027,144         | 1.1                    | 5,284                                 | 0.9                    | 1,124,547         | 1.3                    |
| IT           | 32,663                                | 5.2                    | 8,918,385         | 9.8                    | 33,052                                | 5.4                    | 8,646,238         | 9.7                    |
| LT           | 137                                   | 0.0                    | 125,752           | 0.1                    | 123                                   | 0.0                    | 54,996            | 0.1                    |
| LU           | 18,015                                | 2.8                    | 898,312           | 1.0                    | 14,711                                | 2.4                    | 829,760           | 0.9                    |
| LV           | 186                                   | 0.0                    | 328,026           | 0.4                    | 228                                   | 0.0                    | 307,374           | 0.3                    |
| MT           | 261                                   | 0.0                    | 40,285            | 0.0                    | 109                                   | 0.0                    | 18,389            | 0.0                    |
| NL           | 105,508                               | 16.6                   | 8,484,736         | 9.4                    | 79,204                                | 12.9                   | 8,349,981         | 9.3                    |
| PL           | 301                                   | 0.0                    | 814,715           | 0.9                    | 299                                   | 0.0                    | 513,042           | 0.6                    |
| PT           | 3,709                                 | 0.6                    | 1,066,552         | 1.2                    | 5,670                                 | 0.9                    | 1,070,279         | 1.2                    |
| RO           | 115                                   | 0.0                    | 219,510           | 0.2                    | 50                                    | 0.0                    | 111,702           | 0.1                    |
| SI           | 714                                   | 0.1                    | 713,241           | 0.8                    | 595                                   | 0.1                    | 780,959           | 0.9                    |
| SK           | 840                                   | 0.1                    | 278,956           | 0.3                    | 707                                   | 0.1                    | 187,540           | 0.2                    |
| <b>Total</b> | <b>634,132</b>                        |                        | <b>90,671,378</b> |                        | <b>612,936</b>                        |                        | <b>89,565,697</b> |                        |

Chart 28 Intraday pattern of interbank payments in 2012 – value

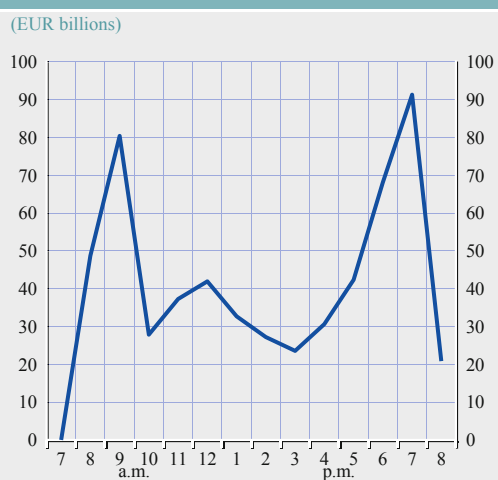
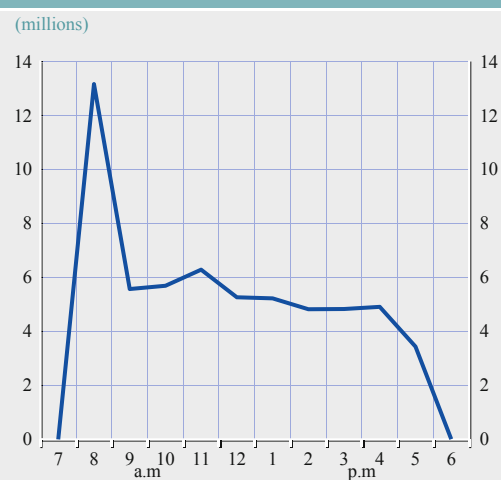
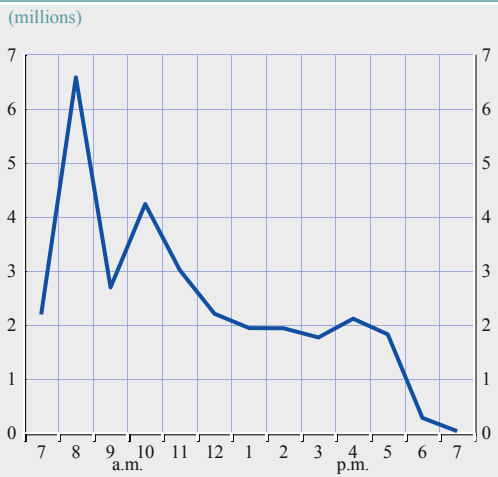


Chart 29 Intraday pattern of customer payments in 2012 – volume

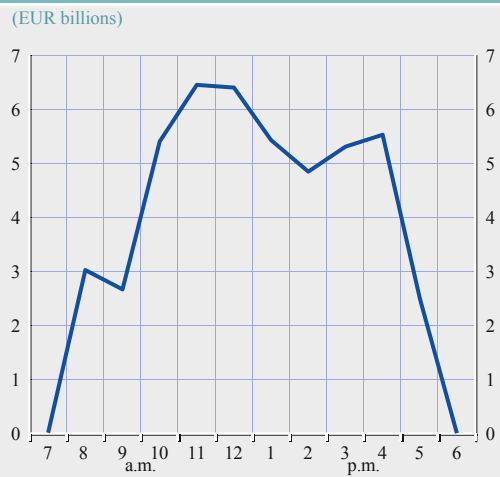


**Chart 30 Intraday pattern of interbank payments in 2012 – volume**



Source: ECB.

**Chart 31 Intraday pattern of customer payments in 2012 – value**



Source: ECB.







