



EUROPEAN CENTRAL BANK

EUROSYSTEM

# TARGET ANNUAL REPORT 2009

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EUROSYSTEM



## TARGET ANNUAL REPORT

2009

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# CONTENTS

## INTRODUCTION

### CHAPTER I

#### THE TARGET2 SYSTEM

- 1 The first-generation TARGET system
- 2 The second-generation TARGET system (TARGET2)
- 3 System rules
- 4 Participation of non-euro area central banks
- 5 Cooperation with users and information guides

### CHAPTER II

#### TARGET2 ACTIVITY IN 2009

- 1 Evolution of TARGET2 traffic
- 2 TARGET2 service level and availability
- 3 TARGET2 participants
- 4 TARGET2 revenues
- 5 TARGET2 risk management and oversight activities
- 6 System evolution
- 7 Further information

#### ANNEXES

- Features and functionalities of TARGET2
- Chronology of developments in TARGET/TARGET2
- General terms and acronyms
- Glossary
- Additional table and charts

#### BOXES

- 1 TARGET2 release management
  - Table TARGET2 release management
- 2 The new TARGET2 payment statistics methodology
  - Chart TARGET Value
- 3 Retail payments in TARGET2
  - Chart A Share of transactions with a value below €50,000 in the total TARGET2 volume of transactions

- 5 Chart B Share of retail transactions in the total TARGET2 volume by country
- 4 Critical participants
- 5 Internet-based access in TARGET2
- 7 6 Main TARGET2 indicators in 2009

#### 8 TABLES

- 10 1 Evolution of TARGET2 traffic

#### 10 CHARTS

- 1 TARGET turnover
- 11 2 TARGET turnover
- 3 Major large value payment systems in the world
- 4 TARGET traffic
- 5 TARGET traffic
- 6 TARGET volume
- 27 7 Comparison of the traffic in LVPS/SWIFT
- 29 8 TARGET market share versus other LVPS in euro
- 31 9 Average value of a TARGET payment
- 32 10 TARGET payment value band
- 36 11 Average value of a TARGET payment
- 38 12 Non-settled payments on the SSP
- 41 13 Share of inter-member state traffic
- 41 14 Contribution to TARGET2 turnover
- 46 15 Contribution to TARGET2 volume
- 54 16 Intraday distribution of TARGET2 traffic
- 56 17 Distribution of processing times on the SSP
- 64 18 TARGET availability
- 12 19 TARGET incidents and delay closing
- 13 20 Number of RTGS accounts in TARGET2



## INTRODUCTION

TARGET, the Trans-European Automated Real-time Gross settlement Express Transfer system, is the first-generation real-time gross settlement (RTGS) system<sup>1</sup> for the euro and commenced operations on 4 January 1999. TARGET was developed by the Eurosystem, the central banking system of the euro area, and offers a premium payment service which transcends 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 an 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.

The Eurosystem has the statutory task of promoting the smooth operation of payment systems. Its main instrument for carrying out this task – aside from the oversight function (see Chapter II, paragraph 5.2) – is the provision of payment settlement facilities. To this end, the Eurosystem created the TARGET system for the settlement of large-value payments in euro.

The first-generation TARGET system started operations in January 1999 and facilitated a rapid integration of the euro money market. Between November 2007 and May 2008, it was replaced by an enhanced second-generation system, TARGET2.

TARGET2 settles payments related to monetary policy operations, as well as payments related to other payment and securities settlement systems. TARGET2 provides intraday finality: settlement is final for the receiving participant once the funds have been credited. The money received is central bank money and it is possible to reuse these funds several times a day.

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. More than 4,400 banks use TARGET2 to initiate payments on their own or on their customers' behalf. Taking into account branches and subsidiaries, over 50,000 banks worldwide (and thus all of the customers of these banks) can be addressed via TARGET2. Consequently, TARGET2 is instrumental in promoting an integrated euro area money market, which is a prerequisite for the effective conduct of the single monetary policy and contributes to the integration of the euro financial markets.

A payment is the process by which cash, deposit claims or other monetary instruments are transferred between economic agents in transactions. The market infrastructure for payments consists of the set of instruments, networks, rules, procedures and institutions that ensures the circulation of money. The principal objective of the market infrastructure for payments, such as TARGET2, is to facilitate the conduct of transactions between economic agents and to support the efficient allocation of resources in the economy. At present, economic agents buy and sell goods (including financial instruments) and services in markets making use of real-time transfer services provided by the market infrastructure. It represents one of the three core components of the financial system, together with markets and institutions.

The complexity and, in particular, importance of the market infrastructure for payment handling has greatly increased over the last two decades owing to the tremendous growth in volumes and values of financial activities, financial innovation and advancements in information and communication technologies.

<sup>1</sup> A real-time gross settlement 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 second-generation successor TARGET2 are examples of RTGS systems.



## THE REPORT AND ITS STRUCTURE

This report is the tenth edition of the “TARGET Annual Report”. The first edition was published in 2000, covering TARGET’s first year in operation (1999). This tenth edition takes account of the fundamental developments which took place in TARGET2 in the course of 2009. The report is addressed to decision-makers, practitioners, lawyers and academics wishing to acquire an in-depth understanding of TARGET2. It will hopefully also be of interest to students with an interest in market infrastructure issues and TARGET2 in particular.

With regard to the report’s structure, Chapter I provides information on the current TARGET2 system and background information on its predecessor. Chapter II details TARGET2 traffic activity, its performance and the main developments that took place in 2009. Finally, the annexes provide details of the main features of TARGET2, a chronology of developments in TARGET/TARGET2, a list with general terms and acronyms, and a glossary.

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

## THE TARGET2 SYSTEM

### I THE FIRST-GENERATION TARGET SYSTEM

#### I.1 PREPARATION FOR THE SINGLE CURRENCY

In the mid-1990s, Europe was pursuing a single currency and EU countries were preparing for the change from their national currencies to the euro. Within the EU's community of national central banks, the question arose as to how the euro could circulate between the Member States in a fast and reliable way. Indeed, there was an urgent need to develop a payment service to serve the needs of what would be the single monetary policy and, at the same time, to facilitate the settlement of euro payments across national borders in the EU. At the time, the majority of Member States already had their own RTGS systems, but only for the settlement of transactions in their national currencies.

Thus, in March 1995 the Council of the European Monetary Institute (EMI) decided that all current EU national central banks should be ready to connect to TARGET by 1999. However, the necessity to be ready in time for the introduction of the euro did not grant sufficient time to build a full-fledged single RTGS system. Therefore, the most practical and immediate solution was to link the existing RTGS systems and define a minimum set of harmonised features, basically for sending and receiving payments across national borders (i.e. inter-Member State payments). At the national level, central banks continued to function as they did for the settlement of payments within their banking community (i.e. intra-Member State payments). This approach kept the changes that the banks and central banks had to undergo to a minimum, which was important at a time when they were already heavily involved in the changeover to the euro and the single monetary policy. As a result, the TARGET system was built by linking together the different RTGS structures that existed at the national level. TARGET, the first-generation RTGS system for the euro, commenced operations on 4 January 1999 following the launch of the euro.

### I.2 TARGET'S FIRST GENERATION

The first-generation TARGET system had a decentralised technical structure which, by the start of the migration to the second-generation system (TARGET2) in November 2007, consisted of 17 national RTGS systems and the ECB payment mechanism (EPM). All these components were interlinked so as to provide a technical framework for the processing of payments across national borders in the EU. TARGET was available for all credit transfers in the countries that had adopted the euro as their currency, as well as in Denmark, Estonia, Poland and the United Kingdom.<sup>2</sup> As a result of its wide participation criteria, it was possible to reach almost all credit institutions established in the EU via TARGET, and hence all their account holders.

Liquidity availability in TARGET/TARGET2 is facilitated by permitting the use of minimum reserve holdings for settlement purposes during the day. In addition, the Eurosystem provides unlimited (collateralised) intraday credit to its counterparties free of interest. Incoming funds are available for immediate reuse, and the high speed at which payments in TARGET/TARGET2 are processed facilitates and improves cash management for its participants. There is no upper or lower value limit for TARGET/TARGET2 payments.

TARGET was originally intended for the processing of large-value payments in euro with the objective of reducing systemic risk<sup>3</sup> throughout the EU. In particular, payments related to monetary policy operations involving the Eurosystem or to the final settlement of systemically important payment and settlement systems had to be made via TARGET, and now by TARGET2. Besides these operations, TARGET users increasingly began using the system for other types of transaction, including

2 Sweden was also connected to TARGET between January 1999 and December 2006.

3 The risk of a problem in one area easily spreading to other areas owing to the high number and value of interactions between banks.



retail payments, thereby benefiting from all the advantages of TARGET in terms of speed, liquidity management and security. Owing to its attractive pricing scheme, even smaller credit institutions in the EU are able to offer their customers an efficient cross-border payment service.

The use of the first-generation TARGET system was supported by a transparent pricing structure, according to which inter-Member State payments were subject to degressive transaction fees (from €1.75 down to €0.80). However, intra-Member State transaction fees were not harmonised and were fixed by individual central banks.

All the national RTGS systems comprising TARGET were operational every day, with the exception of Saturdays and Sundays, New Year's Day, Good Friday, Easter Monday, 1 May (Labour Day), Christmas Day and 26 December. TARGET operated for 11 hours on each of its working days from 7 a.m. to 6 p.m. CET, with a cut-off time for customer payments at 5 p.m. CET.

The rapid integration of the euro area money markets was closely related to the establishment of the TARGET system. 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 by providing its users with a common payment and settlement infrastructure.

Most of TARGET's first-generation features explained here are still valid today or have been enhanced in the second-generation system TARGET2.

## 2 THE SECOND-GENERATION TARGET SYSTEM (TARGET2)

### 2.1 WHY TARGET2?

The first generation of TARGET operated successfully over a number of years in a

market environment that evolved rapidly and was highly competitive. TARGET was able to meet all of its main objectives: it supported the implementation of the single monetary policy, it contributed to reducing systemic risk and it helped banks to manage their euro liquidity at national and cross-border level. Despite these considerable successes, the approach to TARGET adopted in the mid-1990s proved to have some shortcomings, which called for a redesign of the system. TARGET participants increasingly called for an enhanced and more harmonised service offered at the same price across the EU. Furthermore, cost-efficiency was also considered problematic by the Eurosystem, as the revenues generated did not cover a sufficient proportion of the costs. This was largely attributable to the decentralised structure of TARGET, which multiplied the local technical components and therefore increased the maintenance and running costs. And finally, in the context of EU enlargement, new Member States were expected to connect to the system, thereby increasing the number of TARGET components. In order to meet these challenges, the Eurosystem started to examine the options for the evolution of TARGET.

On 24 October 2002 the Governing Council of the ECB took a strategic step and decided on the principles and structure of the next-generation TARGET system: TARGET2. The Governing Council decided that TARGET2 would offer harmonised core services. These core services would be provided by a single technical platform and would be priced according to a single price structure. This new approach was based on technical consolidation that would allow the Eurosystem to achieve lower costs and at the same time recover a very large part of the total costs of TARGET2. A "public good" factor corresponding to the positive externalities generated by TARGET2 (e.g. in terms of the reduction of systemic risk) would be defined, for which costs would not have to be recovered. Finally, the Governing Council acknowledged that, despite the technical consolidation of TARGET2, the decentralised nature of the relationships that the national

central banks had with the counterparties in their respective countries would be preserved, including monetary policy and lender of last resort relationships.

## 2.2 MIGRATION

After five years of planning, development and testing, the Eurosystem successfully launched the TARGET2 system in November 2007, replacing the first-generation TARGET system completely in May 2008. In TARGET2, the decentralised structure of the first-generation TARGET system was 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 provide the SSP for TARGET2 and operate it on behalf of the Eurosystem.

TARGET2 started operations on 19 November 2007, when the first group of countries (Austria, Cyprus, Germany, Latvia, Lithuania, Luxembourg, Malta and Slovenia) migrated to the SSP. This first step was very successful and confirmed the reliability of the TARGET2 platform, which, following this initial migration, was already settling around 50% of overall traffic in terms of volume and 30% in terms of value.

On 18 February 2008 the second migration group (Belgium, Finland, France, Ireland, the Netherlands, Portugal and Spain) successfully connected to TARGET2, followed on 19 May by the final group (Denmark, Estonia, Greece, Italy, Poland and the ECB). As a result of careful monitoring by the national central banks, all related testing activities were completed successfully and on time for all user communities. Between November 2007 and May 2008 procedures were put in place to ensure that those user communities which had a later migration date (and were therefore still connected to the former TARGET system) could interact effectively with the user communities already connected to the SSP of TARGET2. The six-month migration process was very smooth and did not cause any operational disruptions.

More details on the migration to TARGET2 can be found in the TARGET Annual Report 2008 (Chapter III, “The effect of the migration to TARGET2”).<sup>4</sup>

## 2.3 HARMONISED SERVICES

The move from a decentralised multi-platform system to a technically centralised platform has made it possible to offer harmonised services at EU level. Today, a harmonised service level is offered to TARGET2 participants 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. The main advantage for ancillary systems is that they are able to access any account in TARGET2 via a standardised interface. There are currently 71 ancillary systems settling in TARGET2. Before the launch of TARGET2, each ancillary system had its own procedure for settlement. Now TARGET2 offers six generic procedures for the settlement of ancillary systems (two real-time and four batch procedures), thereby allowing the substantial harmonisation of business practices.

The new functionalities of TARGET2 enable 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. Within a group of accounts, group pricing is possible, which means a degressive transaction fee applies to all of the group’s payments as if they were sent from one account.

<sup>4</sup> Available at <http://www.ecb.europa.eu/press/pr/date/2009/html/pr090515.en.html>.

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

More details on the features and functionalities of the second-generation TARGET system can be found in Annex 1 (“Features and functionalities of TARGET2”).

### 3 SYSTEM RULES

#### 3.1 SPECIFICATIONS

The General Functional Specifications (GFS) provide a high-level overview of the SSP for TARGET2 and its functional specifications. The latest version of the GFS (version 2.1) was made available to the user community in June 2007. The User Detailed Functional Specifications (UDFS) provide a more in-depth and detailed explanation of the core services (book 1) and the optional services (book 2) offered by the SSP, as well as XML messages (book 4). The latest version of books 1, 2 and 4 of the UDFS (i.e. version 4.0) was made available to the user community in March 2010.

The user handbook for the information and control module (ICM) of the SSP describes the ICM’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 3.0) was made available to the user community in October 2009.

#### 3.2 TARGET2 GUIDELINE

In June 2007 the Eurosystem finalised the TARGET2 Guideline, which repeals the guideline

governing the operation of the first-generation TARGET system. The new TARGET2 Guideline provides the basis on which the national central banks establish their TARGET2 component systems, governed by their national legislation. It contains the main legal elements of TARGET2, including governance arrangements and audit rules, as well as transitory provisions on the migration from the original TARGET system to TARGET2. In addition, to ensure the maximum legal harmonisation of the rules applicable to TARGET2 participants in all jurisdictions concerned, the Guideline includes harmonised conditions for participation in TARGET2. These conditions have been drafted in a way that allows the national central banks to implement them in an identical manner, with certain derogations only in the event that national laws require other arrangements.<sup>5</sup> Moreover, the harmonised conditions already contain alternatives which enable national central banks to customise their implementation in line with the requirements of national law. This approach implements the decision of the Governing Council of the ECB in October 2005 to “legally construct TARGET2 as a multiple system, but aiming at the highest degree of harmonisation of the legal documentation used by the central banks within the constraints of their respective national legal framework”.

The TARGET2 Guideline was published in the Official Journal of the European Union in September 2007 and is also available on the ECB’s website in all EU languages.<sup>6</sup>

### 4 PARTICIPATION OF NON-EURO AREA CENTRAL BANKS

On 24 October 2002 the Governing Council of the ECB decided that, after joining the EU, the national central banks of the new Member States would be given the same rights and obligations with regard to TARGET connection as the non-euro area national central banks already

<sup>5</sup> No national derogations have been identified so far by the national central banks.

<sup>6</sup> See <http://www.ecb.int/ecb/legal/1003/1349/html/index.en.html>.

participating in the system.<sup>7</sup> Different technical options for such connections, including variants avoiding the need for individual euro RTGS platforms, were elaborated and presented to the national central banks of the new Member States on a “no compulsion, no prohibition” basis. Only when new Member States join the euro area does the connection to TARGET become mandatory, as its use is mandatory for the settlement of any euro operations involving the Eurosystem. A recent example is Slovakia, which 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.

For national central banks which have not yet adopted the euro, participation in TARGET2 is optional to facilitate 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.

Following Narodowy Bank Polski’s connection to TARGET via the Banca d’Italia’s RTGS system in 2005, in November 2006 Eesti Pank’s euro RTGS system was also connected to TARGET via the Banca d’Italia’s system. In view of Slovenia’s entry into the euro area in January 2007, Banka Slovenije decided, for efficiency reasons, not to develop its own euro RTGS system, but to use the RTGS system of the Deutsche Bundesbank to connect to TARGET. Banka Slovenije commenced operations as a member of the Eurosystem in January 2007.<sup>8</sup>

Other new Member States, i.e. Cyprus, Latvia, Lithuania and Malta, have been able to send and receive payments via TARGET since its second generation commenced operations in November 2007. Moreover, Cyprus and Malta carried out all the preparatory work necessary to act as a Eurosystem central bank in TARGET2 from 2 January 2008 onwards. The same is true of Slovakia, which adopted the euro and was connected to TARGET2 on 2 January 2009.

In February 2010, after having carried out the necessary preparations and testing activities, Българска народна банка (Bulgarian National Bank) and its national user community connected to TARGET2. In total, 23 central banks of the EU and their respective user communities are connected to TARGET2: the 17 euro area central banks (including the ECB),<sup>9</sup> and six central banks from non-euro area countries.<sup>10</sup>

Although connected to the former TARGET system via the local component CHAPS euro, the Bank of England decided to discontinue its connection on 16 May 2008, which was the last operational day of TARGET’s first-generation system. Likewise, although connected to the former TARGET system via the local component E-RIX, Sveriges Riksbank decided to discontinue its connection on 31 December 2006.

## 5 COOPERATION WITH USERS AND INFORMATION GUIDES

### 5.1 USER COOPERATION

During its development, TARGET2 benefited greatly from cooperation between the Eurosystem and future users of the system. This considerably improved the understanding of market requirements and was instrumental in ensuring a smooth migration process and high levels of acceptance of the system by users. The user-consultation process was very fruitful, although taking the different needs of national stakeholders into account was not always an easy task. Nevertheless, TARGET2 had to be designed to fully meet users’ requirements. The main requirements were: maximum

7 At the time, the Bank of England, Danmarks Nationalbank and Sveriges Riksbank.

8 Slovenian banks and Banka Slovenije had been able to use TARGET since July 2005 via remote access to the German TARGET component.

9 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, and Slovakia, which joined the euro area in January 2009.

10 Denmark, Poland, Estonia, Latvia, Lithuania and Bulgaria.

harmonisation of services and related fees, increased cost-efficiency, flexible liquidity management facilities, high levels of business continuity and effective contingency measures.

The Eurosystem maintains close relations with TARGET2 users and regular meetings are held at national level between the national central banks connected to the system and the respective national user groups. In addition to the cooperation at the national level, joint meetings of the Eurosystem Working Group on TARGET2 (WGT2) and the TARGET Working Group (TWG), which comprise representatives of the European banking industry, take place regularly at a pan-European level. Four such joint meetings took place in 2009. Operational issues, in particular regarding the management of new system releases, are discussed in the joint TWG-WGT2 meetings. Strategic issues are addressed in the Contact Group on Euro Payments Strategy (COGEPS), a forum in which the senior management of commercial and central banks is represented.

Relevant information of interest to the user community is published regularly on the dedicated TARGET2 website, on the ECB's website and on the websites of the national central banks. As a new method of providing information, in 2009 two TARGET2 newsletters were published by the Eurosystem, one in June and one in December.<sup>11,12</sup> In addition, the contents of the TARGET2 website were brought into line with the current operation phase, and new information was made available such as the regular updates on the TARGET2 performance indicators (traffic volumes and values, and system availability).

## 5.2 INFORMATION GUIDE FOR TARGET2 USERS

The "Information guide for TARGET2 users" aims to provide banks and ancillary systems using TARGET2 with a standard set of information in order to give their operators a better understanding of the overall functioning of the system and enable them to make use of it as efficiently as possible. Moreover, it answers the most frequently asked questions relating to TARGET2. In addition to information on the operational procedures in normal circumstances, the information guide also provides information for abnormal and contingency situations.

The latest version of the information guide (version 3.0) was made available to the user community on 23 November 2009. The information guide is intended solely to provide information on the TARGET2 system and should not be seen as a legal or contractual document.

## 5.3 INFORMATION GUIDE FOR TARGET2 PRICING

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

<sup>11</sup> Available at [http://www.ecb.europa.eu/paym/t2/shared/pdf/20090619\\_T2newsletter.pdf](http://www.ecb.europa.eu/paym/t2/shared/pdf/20090619_T2newsletter.pdf).

<sup>12</sup> Available at [http://www.ecb.europa.eu/paym/t2/shared/pdf/t2newsletter\\_q4.pdf](http://www.ecb.europa.eu/paym/t2/shared/pdf/t2newsletter_q4.pdf).

Box I

**TARGET2 RELEASE MANAGEMENT**

The Eurosystem endeavours to keep the TARGET2 system up to date with the various business changes in the field of large-value payments. This ongoing interest in the system’s evolution is seen as a necessity to further increase its level of service and the satisfaction of its participants. For this reason, it is of great importance that all stakeholders be involved in the release management process in a proper and timely manner.

In general, TARGET2 releases take place annually and coincide with the annual standard SWIFT releases in November. In exceptional circumstances, however, it is possible for an intermediary release to be scheduled (i.e. two releases in the same year) or for no release to be issued in a given year.

The annual TARGET2 release is a long process, which takes place over a 21-month period in order to give all parties enough time for discussion, prioritisation, implementation and testing. Furthermore, information is made available to participants early enough to allow for proper planning and budgeting of all changes.

**Main applicable deadlines**

All dates provided in this section are indicative and are confirmed by the Eurosystem for each annual release in the course of February of year Y-1. While an effort will be made to keep to these dates as much as possible, limited deviations may be allowed, if and when needed, and after consultation with the user community.

**User involvement**

Two consultations with the user community are organised as part of the discussions regarding the content of the annual TARGET2 release. In order to involve all TARGET2 users in the definition of the release content, the national central banks of countries connected to TARGET2 will contact their respective national user groups and, in parallel, the ECB will approach the TWG of the European Banking Federation.

- The first consultation aims to collect proposals for functional changes from all TARGET2 users. These changes are expected to be sufficiently detailed and to be beneficial for a large

**TARGET2 release management**

Year Y-1	Mid-February End-February – end March End-March – end April Mid-September – mid-October Mid-November	<b>Confirmation of final dates</b> <b>First user consultation – collection of items</b> <b>First user consultation – feedback on collected items</b> <b>Second user consultation</b> <b>Communication on the release content</b>
Year Y	Early March Mid-April End-August Mid-November	<b>Delivery of the UDFS</b> <b>Delivery of the test plans and scenarios</b> <b>Start of user testing</b> <b>Go-live</b>



number of users. Proposals should describe the business case and the expected functional changes in a precise manner. A harmonised template is provided by the Eurosystem for the submission process. The first user consultation is carried out in two steps. First, the changes are collected from the TWG and the national user groups. Second, the changes are compiled and distributed widely so that communities can comment on each other's proposals. At the end of the first consultation, all proposals made by the user communities are carefully considered by the Eurosystem in order to identify a subset of changes on which a further cost/benefit assessment will be carried out.

- The second consultation aims to collect users' feedback on changes short-listed by the central banks as a result of the first user consultation. No new proposals for changes are possible during this phase. When applicable, pricing elements for the envisaged features are also provided. At the end of the second consultation, the Eurosystem considers all feedback received from users and forms a final view on the content of the annual TARGET2 release, which is communicated shortly thereafter.

#### **Prioritisation and decision-making**

When prioritising the various proposals received from users or when making a final decision on the release content, central banks give due consideration to the following criteria.

- For each individual change, a thorough cost/benefit analysis is carried out. This mainly looks at the feedback received from the user communities during the consultation rounds, the benefits for the industry as a whole in terms of service brought about by the change, the expected usage of the feature, the investment and operational cost at stake, the sustainability of the new service from a cost recovery perspective, the complexity of the developments, and the possible risk of introducing regression bugs. Lastly, whenever it is relevant, central banks also consider the compliance of the change with the Eurosystem's policy or strategic stances on TARGET2.
- For the release as a whole, the central banks aim to ensure that the release content is well balanced in terms of the benefits for the different types of user and that it complies with the workload and budget limits fixed for the annual release.

As a matter of transparency, after each consultation step, users are provided with the necessary information as to why a change is selected or discarded.

## CHAPTER II

### TARGET2 ACTIVITY IN 2009

The TARGET2 system functioned smoothly in 2009 and, with a stable market share of 89% of the total value of payments in large-value euro payment systems, confirmed its dominant position in the European landscape. The total number of payments processed by the TARGET2 system, however, decreased by 6.5% in volume and by 19.3% in value, as compared with the year 2008, with the average daily volume totalling 345,768 transactions, representing an average daily value of €2,153 billion. The availability of the system reached 99.998%. This is the highest availability figure since the launch of TARGET in 1999. Finally, on 30 June 2009, TARGET2 reached a peak of 539,336 transactions, representing a value of €3,427 billion.

#### Box 2

##### THE NEW TARGET2 PAYMENT STATISTICS METHODOLOGY

One of the difficulties resulting from the decentralised structure of TARGET, which linked a wide variety of disparate systems, was that of trying to extract accurate and comparable statistical data from each component. This difficulty was compounded by the different technical and organisational structures as well as business practices in each country.

With the introduction of the Single Shared Platform (SSP) in TARGET2, the ESCB took the opportunity to refine the data collection method to ensure a greater accuracy and comparability of the data across the Eurosystem. In order to ensure that there would be a clean cut-off between the data from before and after the change, it was agreed that this change in the data collection should take place only when all central banks had migrated to TARGET2 and that, in order to preserve the continuity of statistics to the greatest extent possible, the change should be implemented at the beginning of a calendar year; this dictated the start date of January 2009.

##### What is a payment?

This, at first glance nonsensical, question is not always easy to answer when collecting data from payment systems. Not every book entry in the system can be counted as a business transaction. At the two extremes, for example, a transfer of funds between two distinct participants, i.e. a transaction with a change in the legal ownership of central bank money, is clearly a payment, while a transfer from a participant's account to a sub-account (as is often used for ancillary system transactions) involves no change in the ownership of the funds and is, in fact, only made for technical reasons, so that there is no business transaction behind the transfer and cannot therefore be seen as a payment. Between these two examples lie many other less clear-cut cases. With the new methodology, a strict approach has been taken. As far as possible, those types of transactions that are made for purely technical reasons or that are due to the accounting structure of TARGET2 have been identified, and excluded from the reporting. This means that the values and volumes reported may be slightly lower than in the case of the previous methodology, under which some of these transactions would have been counted.

##### The effect on the transaction data

The effects these changes have on the volumes in TARGET2 are very small. However, the effects on the values are significant and can be seen in the chart below. It is based on the payments data from August to October 2009 and compares the values reported with those that would have

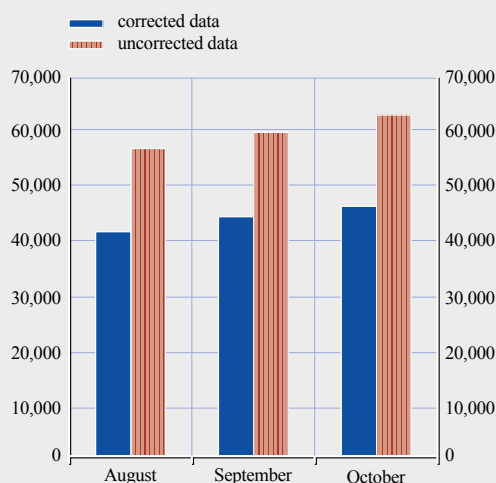
been reported if no filtering were applied. The difference between the two columns in the charts corresponds to the value of the technical transactions. These consist of transfers between (a) the payment module and the proprietary home accounts (PHAs) belonging to the same participant, (b) the payment module and the home accounting module (HAM) accounts belonging to the same participant and (c) the payment module and sub-accounts as part of settlement model 6 on the ancillary system interface (ASI). Expressed as a percentage, these technical transfers make up over 25% of the value of all the book-entry transfers in TARGET2.

### More sophisticated data collection

A further refinement in the data collection allows the ESCB to better analyse the use of TARGET2 from a business perspective. This improvement is attributable to a breakdown of the data into categories, namely the type of user (ancillary system, credit institutions or central bank), the instrument (credit transfer, direct debit, etc.), the part of TARGET2 in which the payment is made (HAM, PHAs or payment module) and, for those payments where a central bank is involved, the purpose of the transaction. Over the medium term, analysis of this data is expected to provide a deeper insight into how participants make use of TARGET2 and to enable the ESCB to identify trends or changes in usage and thus better meet the participants' needs. A further benefit will be the possibility to better observe the effects of particular events on participants' payment practices, thus helping to plan for, and subsequently respond to, such events in the market in future.

### TARGET2 value

(EUR billion)



Source: ECB.

## I EVOLUTION OF TARGET2 TRAFFIC

### I.1 TARGET2 TURNOVER

In 2009 TARGET2 settled transactions with a total value of €551,176 billion, which corresponds to a daily average value of €2,153 billion. This means that TARGET2

settled the equivalent of the euro area's annual GDP in around 3.5 days of operations. This indicates the 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

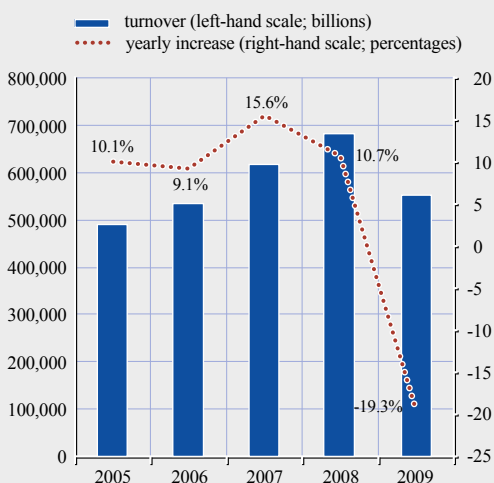
Table I Evolution of TARGET2 traffic

		EUR billions		Change %	Number of payments		Change %
		2008	2009		2008	2009	
<b>TARGET overall</b>	Total	682,780	551,174		94,711,380	88,516,538	
<i>of which</i>	Daily average	2,667	2,153	-19.3	369,966	345,768	-6.5

Source: ECB.

Chart 1 TARGET turnover

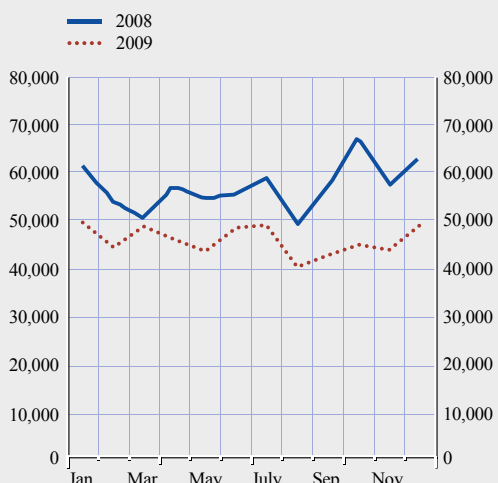
(valued settled per year; in EUR billion)



Source: ECB.

Chart 2 TARGET turnover

(total value exchanged on a monthly basis in EUR billion)



Source: ECB.

TARGET2 participants within the same day. While the system's turnover had increased constantly since its launch in 1999, it dropped sharply by 19.3% in 2009. The explanation for this significant decrease is three-fold. First, the decrease in the number of transactions, attributable to the financial crisis, logically led to a decrease in the turnover (cf. Section 1.2). Second, the increase in the average duration of the open market operations (in particular, the introduction of long-term refinancing operations (LTROs) with a maturity of one year) also had a negative effect on the value settled in TARGET2. Third, the methodology used for calculating the system's turnover was amended in 2009, and now excludes some technical transactions that were counted in previous years, such as the repatriation of balances on proprietary home accounts or the reserving of liquidity on sub-accounts. Further information on this methodological change can be found in Box 2. As in previous years, interbank transactions account for a vast majority of the system's turnover, at a share of 92%, with the remaining proportion being made up of customer transactions.

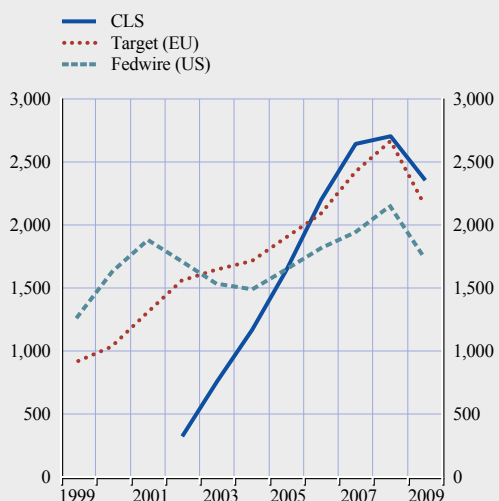
Chart 2 looks at the value settled in TARGET2 on a monthly basis. In each month in 2009, the value settled in TARGET2 was lower than that of the corresponding month in 2008, with the difference being even greater in the last quarter of 2009. This phenomenon was due to the exceptionally high turnover recorded towards the end of 2008 as a result of the refinancing operations processed in the aftermath of Lehman Brothers' default. It should also be noted that the seasonality of TARGET2's turnover throughout the year 2009 was less pronounced, with a deviation of only 23% between the highest and the lowest figures (compared with 36% in 2008). This pattern is more similar to that observed before the financial crisis.

Finally, Chart 3 provides the average value settled in the major payment systems in the world over the last ten years.<sup>13</sup> It illustrates the relevance of TARGET2 and its worldwide position among the biggest payment systems,

<sup>13</sup> For a meaningful comparison, the value exchanged in foreign systems has been converted into euro using the fixing rate on 31 December for each year.

**Chart 3 Major large value payment systems in the world**

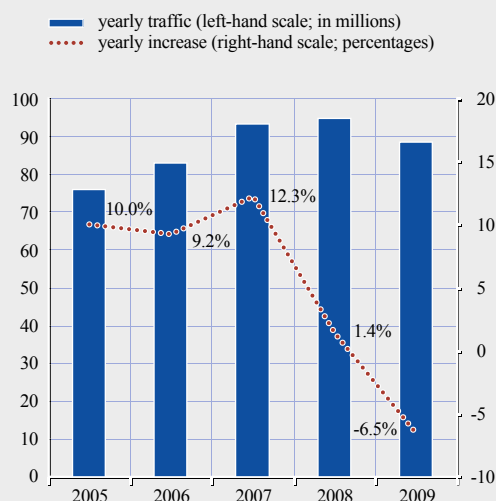
(daily turnover in EUR billion (equivalent))



Source: ECB.

**Chart 4 TARGET traffic**

(number of transactions settled (in millions))



Source: ECB.

alongside the Continuous Linked Settlement (CLS) and the RTGS systems operated by the US Federal Reserve (Fedwire Funds). It is interesting to note that for the last five years, the evolution of the traffic in these three major systems followed a similar pattern. In particular, in 2009 they all stopped their rapid progression, presumably as a direct consequence of the financial crisis. Lastly, it should be recalled that the figures reported in Chart 3 should be taken with caution as the Fedwire Funds and CLS figures are biased on account of the volatility of the euro's exchange rate vis-à-vis the US dollar.<sup>14</sup>

## 1.2 TARGET2 VOLUME

In 2009 a total of 88,517,341 transactions were settled in TARGET2, which corresponds to a daily average of 345,768 transactions. This figure represents a decrease of 6.5% compared with 2008. It is the first time since the launch of the first-generation TARGET system in 1999 that such a decrease has been recorded. Already in 2008, after several years of high increases (on average, 10% per

annum), traffic had started to flatten. This reversal in performance is attributable to the effect of the financial crisis on the large-value payments market. As in previous years, customer transactions represented a majority of the system's traffic, accounting for 58% of the total number of TARGET2 payments, while the remaining part corresponded to interbank transactions.

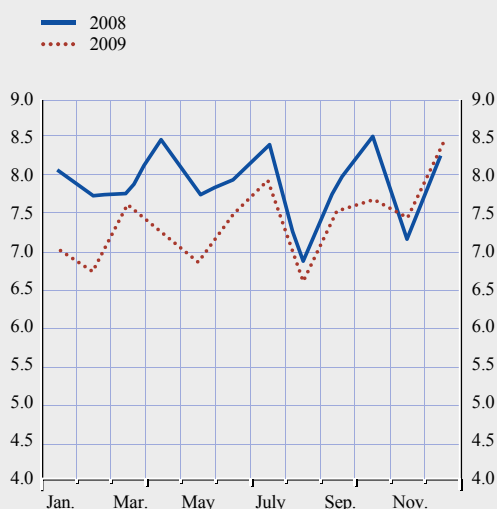
Chart 5 looks at the volume settled in TARGET2 on a monthly basis. It shows that the decrease in traffic was more pronounced in the first half of the year (-10%) than in the second half (-3%). In the second half, with the exception of the month of October, the two curves converged and, in November and December, the trend even became inverted with increases of 4% and 1% respectively in comparison with the same months in 2008.

Chart 6 shows the yearly moving average of TARGET2 volumes (i.e. the cumulative volume

<sup>14</sup> Both Fedwire and CLS publish their turnover in US dollars. The turnover in euro is calculated on the basis of the reference rate of the ECB for the last business day of the year.

Chart 5 TARGET traffic

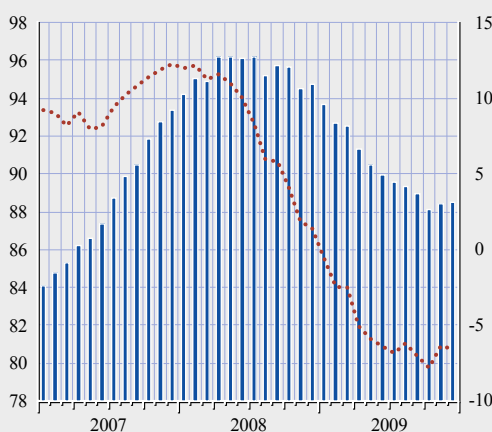
(volume exchanged on a monthly basis; in EUR million)



Source: ECB.

Chart 6 TARGET volume

— cumulative traffic on the last 12 months (left-hand scale: in million transaction)  
 ..... yearly trend (right-hand scale: percentages)



Source: ECB.

processed in the preceding 12 months) for each month. This indicator helps to eliminate the strong seasonal pattern observed in TARGET2 traffic. It shows that after a long-lasting increase, TARGET2 traffic initially stagnated in 2008 and then started to decline roughly at a time that coincided with the financial events of September 2008.<sup>15</sup> From that time onwards, the number of transactions started to drop sharply for around one year. As already noted in Chart 5, the trend seemed slowly to become inverted towards the end of 2009, and cumulative traffic is stabilising at the level of mid-2007.

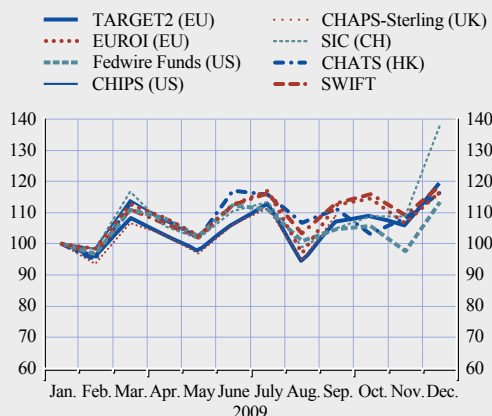
Chart 7 compares the TARGET2 traffic to that of similar large-value payment systems in Europe (EURO1) and other currency zones (CHAPS-Sterling, Fedwire Funds, CHIPS, CHATS and SIC), as well as with the SWIFT volumes (for FIN payment messages). The chart shows the evolution of traffic in the respective systems, using the volumes recorded in January 2009 as a basis. The pattern followed by all these selected market infrastructures is roughly identical and confirms that the above-mentioned phenomenon is not specific to TARGET2. Alternatively, it suggests that

the trend is, most presumably, a consequence of the general shrinking of the large-value payment market in the wake of the financial crisis. This finding is corroborated by the fact

15 From a TARGET2 perspective, the effects of the financial turmoil became more apparent as from September 2008 and the bankruptcy of Lehman Brothers, and the deterioration in credit market conditions.

Chart 7 Comparison of the traffic in LVPS/SWIFT

(percentages; taking January 2009 as 100% basis)



Source: ECB.



that, in TARGET2, the decrease is affecting all segments of activity (i.e. interbank and customer payments) evenly, and all connected banking communities.

### 1.3 MARKET SHARES OF LARGE-VALUE PAYMENT SYSTEMS

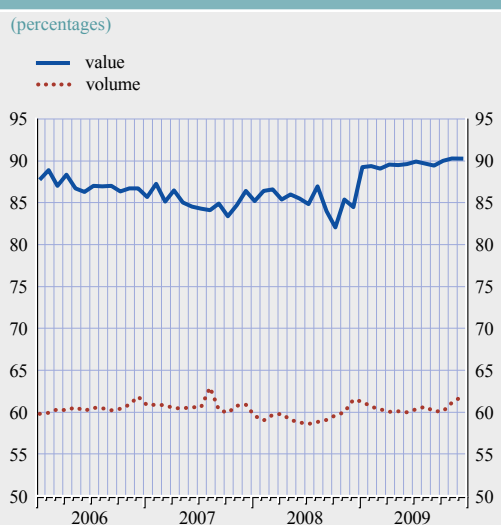
TARGET2's market share is defined as the percentage of the traffic flowing through all large-value payment systems operating in euro which was processed in TARGET2. In 2009 it remained at the high levels observed in previous years, more precisely at 89.4% in value terms (90.2% in 2008) and at 60.3% in volume terms (59.2% in 2008). This confirms that TARGET2 remained the market's preferred system for the processing of large-value payments in euro. The only large-value payment system that constitutes an alternative for banks is the EURO1 system operated by EBA Clearing. It is worth noting that in the last few years, two other large-value payment systems have ceased operations, namely the Spanish system *Servicio Español de Pagos Interbancarios* (SEPI), which closed in December 2004, and the French system *Paris Net Settlement* (PNS),

which closed in February 2008. Lastly, as the Finnish system *Pankkien On-line Pikasiirrot ja Sekit-järjestelmä* (POPS) is used only domestically and as its volumes are negligible in comparison with those of TARGET2 and EURO1, it is no longer included in the large-value payment system statistics collected and published by the ECB.

### 1.4 VALUE OF TARGET/TARGET2 PAYMENTS

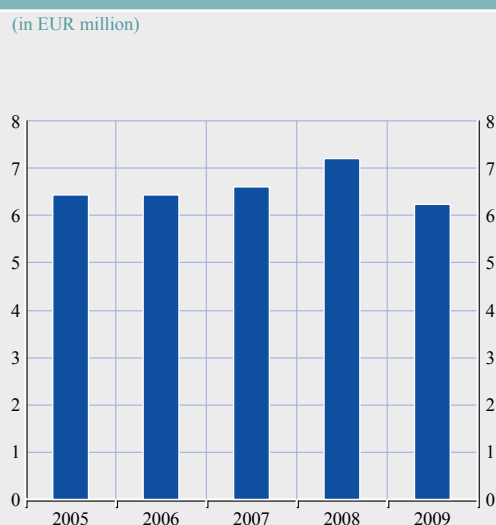
Chart 9 shows the evolution of the value of a TARGET/TARGET2 payment since 2005. While the average has remained relatively stable over the last few years, it decreased by around €1 million to €6.2 million in 2009. There are two main reasons for this development. First, the average value recorded in 2008 was exceptionally high and was caused by the financial turmoil (cf. TARGET Annual Report 2008), in particular by the lower volume in TARGET2 in the last quarter, together with the high amounts processed in connection with refinancing operations or deposits. Second, the turnover in 2009 dropped sharply and disproportionately more than the volume (cf. Section 1.1), which mathematically

Chart 8 TARGET market share vs other LVPS in euro



Source: ECB.

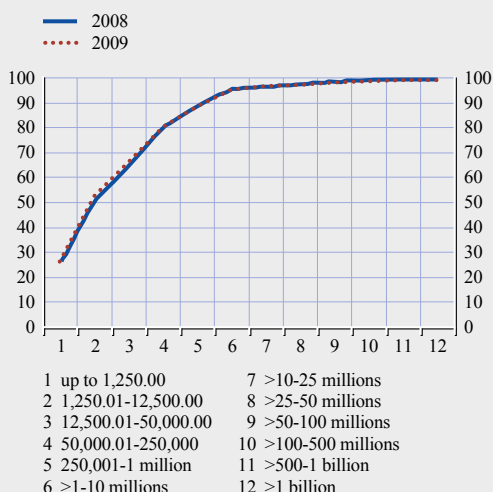
Chart 9 Average value of a TARGET payment



Source: ECB.

Chart 10 TARGET payment value band

(percentages)



Source: ECB.

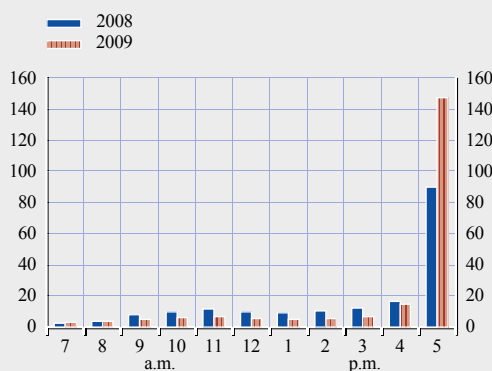
brings down the average value of TARGET2 payments. Nevertheless, a comparison with previous years shows that the level recorded in 2009 was roughly similar to those recorded before the financial crisis.

Chart 10 illustrates the distribution of TARGET2 transactions per value band, indicating the proportion of the volume that is below certain pre-selected values. Two-thirds of all TARGET2 transactions were for values of less than €50,000, and payments in excess of €1 million only accounted for 11% of the traffic. On average, there were 329 payments with a value above €1 million per day, which accounted for 0.1% of payment flows. Compared with previous years, these figures are fairly stable. They confirm that, even though TARGET2 was designed primarily to settle large-value payments of mostly an interbank nature, it offers very competitive services and prices not only for large-value payments, but also for transactions with a lower value (see Box 3), which are considered mainly to be retail in nature.

Finally, Chart 11 provides the average value of TARGET2 payments between Member

Chart 11 Average value of a TARGET payment

(intraday pattern; EUR million)



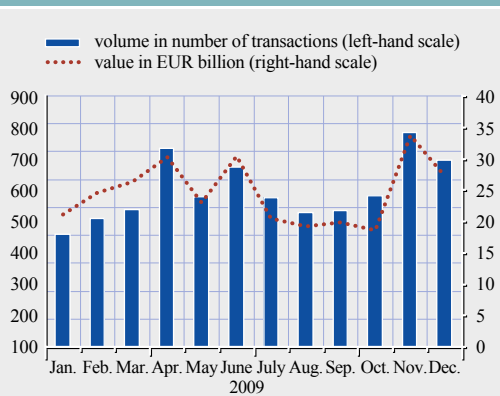
Source: ECB.

States at different times of the day. It confirms the very strong intraday pattern observed in previous years, with the hourly average value of transactions increasing steadily throughout the day and reaching a peak between 5 p.m. and 6 p.m., which is a consequence of banks' refinancing operations on the money market. In 2008, the average value of TARGET2 payments in the last hour of operations had decreased sharply in comparison with previous years, falling to €90 million as a result of the financial crisis and, more specifically, the contraction of money market activity during the last quarter. In 2009, the average value increased dramatically, climbing to €150 million, closer to the pattern observed before 2008.

### 1.5 NON-SETTLED PAYMENTS

Non-settled payments in TARGET2 are those transactions that were pending on account of a lack of funds or for breaching the sender's limit at the time the system closes, and are ultimately rejected. Chart 12 shows the evolution of non-settled payments in the course of 2009 in terms of both volume and value. On a daily average, there were 560 non-settled payments on

**Chart 12 Non-settled payments on the SSP**



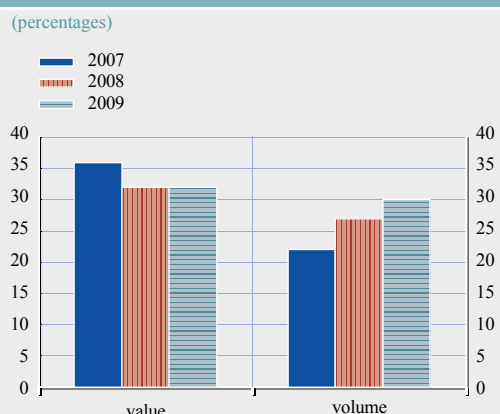
Source: ECB.

the SSP for a value of €25 billion, representing 0.15% of the overall volume and 1.15% of the total turnover respectively settled per day in TARGET2. These figures are roughly comparable with those of last year, namely 600 transactions for €30 billion. The relatively low level confirms that the distribution of liquidity across participants was fairly appropriate throughout that period.

### 1.6 SHARE OF INTER-MEMBER STATE TRAFFIC

In 2009, the share of inter-Member State traffic in TARGET2 (i.e. payments exchanged between two participants belonging to different

**Chart 13 Share of inter-member state traffic**



Source: ECB.

national banking communities) was 32% in value terms and 29% in volume terms. These figures are relatively similar to those reported in 2008, when they were 32% and 27% respectively.

As already noted in the TARGET Annual Report 2008, the migration to the Single Shared Platform (SSP) of TARGET2 helped to further blur the distinction between inter-Member State and intra-Member State transactions. The fact that a payment 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. For this reason, the TARGET2 statistics published by the Eurosystem (within the scope of this report or on an ad hoc basis) will make less and less reference to such a distinction.

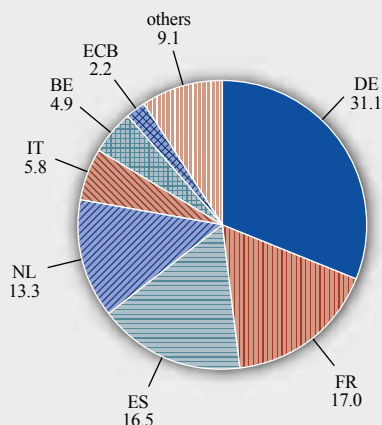
### 1.7 SHARES OF NATIONAL BANKING COMMUNITIES

Even though TARGET2 should be seen as single system providing settlement services to all its participants from a single technical platform, it is still possible to break down the turnover and volume by national banking communities.

Chart 14 shows how the different banking communities contribute to the value settled in TARGET2. In the interests of legibility, only those countries representing more than 2% of overall TARGET2 turnover are represented. As in previous years, activity is highly concentrated on a small number of banking communities. For example, five countries were the main contributors to TARGET2 turnover, namely Germany, France, Spain, the Netherlands and Italy, together accounting for 83.8% of the value exchanged. This figure has increased continuously over the last few years (82% in 2008 and 79% in 2007). The reason for this higher rate is to be found in the possibility offered by the TARGET2 system since November 2007 to consolidate the activities of banking groups around a single RTGS account held by the group's head office, hence increasing

Chart 14 Contribution to TARGET2 turnover

(percentages)



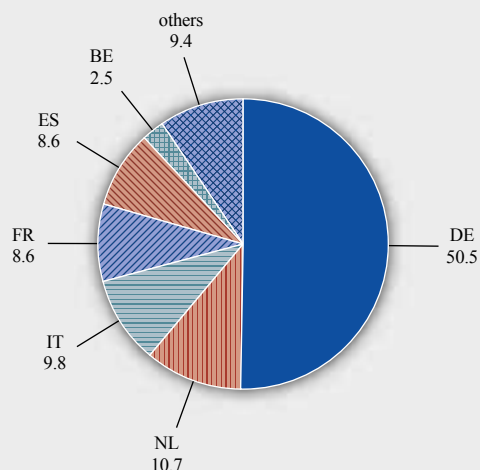
Source: ECB.

the concentration in countries where a majority of these groups are incorporated.

Chart 15 breaks down the contribution of the banking communities to TARGET2 volumes. In the interests of legibility, only those countries representing more than 2% of the overall volume are represented. Here, the concentration phenomenon is even more marked, with one

Chart 15 Contribution to TARGET2 volume

(percentages)



Source: ECB.

single banking community, namely that in Germany, accounting for roughly half of the volume exchanged. Adding the Dutch, Italian, French and Spanish banking communities increases this figure to 88.2%. Here, too, the concentration rate around the five biggest countries marks has increased regularly in comparison with previous years (86% in 2008 and 80.6% in 2007). The explanation is similar to that given for the higher concentration of TARGET2 turnover.

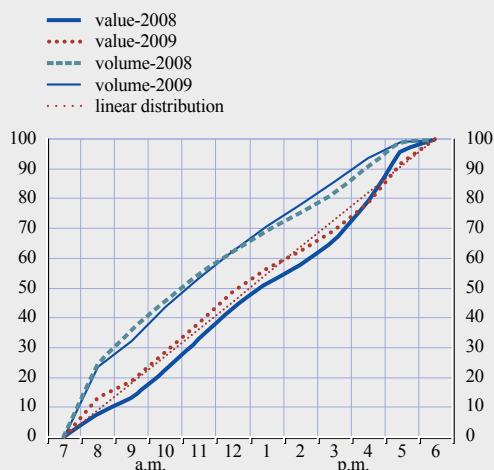
### 1.8 PATTERN OF INTRADAY FLOWS

Chart 16 shows the intraday distribution of TARGET2 traffic, i.e. the percentage of daily volumes and values processed at different times of the day.

In value terms, the curve is very close to a linear distribution. This indicates that turnover is evenly spread throughout the day and that liquidity is circulating appropriately among participants, thereby ensuring the smooth settlement of TARGET2 transactions. At 1 p.m. CET, 56% of the value exchanged in TARGET2 has already been settled, a figure which reaches 92% one hour before the end of

Chart 16 Intraday distribution of TARGET2 traffic

(percentages)



Source: ECB.

the day. In comparison with 2008, the curve shows a significant progression of around 5% in almost all time segments. This is mainly due to the change in the statistical methodology (cf. Box 2), which excludes a number of technical transactions that are processed towards the end of the day.

In volume terms, the curve is well above the linear distribution, with 24% of the transactions being submitted to the system after one hour of operations and 44% after three hours. One hour before the system closes, 99.7% of the TARGET2 volume has already been processed. Comparison with 2008 does not show significant deviations.

### 1.9 TRANSITION PERIOD

In 2005, the Governing Council agreed on a maximum transition period of four years after the migration to TARGET2 for settling transactions between market participants and transactions stemming from ancillary systems'

settlement, as well as payments related to open market operations in the central banks' local PHAs. Since the completion of the migration in May 2008, some central banks that were still operating a PHA for settlement purposes undertook serious efforts to shorten the transition period, as in the case of Belgium and Portugal, for instance. At TARGET2 level, the number of transactions settled in the PHAs dropped from 3% of the overall traffic to 1% in the last 18 months. At the same time, 14 of the 16 ancillary systems that were initially settling on a local PHA migrated to the SSP. This confirms that settlement activities on the PHAs are marginal and that, in practice, the fragmentation of participants' liquidity between the SSP and the PHAs had limited and manageable effects.

At the end of 2009, only 6 of the 23 central banks connected to TARGET2 were still operating local PHAs for settlement purposes. On its own, the German PHA represented 92% of the value settled in PHAs.

#### Box 3

##### RETAIL PAYMENTS IN TARGET2

Payments are normally divided into two segments, namely large-value interbank payments and low-value retail transactions. Although this distinction has never been clear-cut, large-value payments systems (LVPSs) mainly focus on processing wholesale interbank transactions of a very high amount and great urgency in real time. As opposed to this, retail payment systems settle mainly consumer payments of relatively low value and urgency.<sup>1</sup>

Historically, central banks have traditionally focused their attention on designing, operating and overseeing LVPSs, which are intended for processing large-value payments related to monetary policy operations, money market transactions, as well as other systemically important payments. However, more recently, retail payments have been given growing attention by central banks worldwide. In this context, the active role taken by the Eurosystem in acting as a catalyst of the Single Euro Payments Area (SEPA) initiative should be mentioned. The goal of SEPA was to create an integrated retail payment market for all non-cash payments in euro using a single set of instruments. SEPA already became reality with the successful launch of SEPA credit transfers (SCTs) in January 2008 and SEPA direct debits (SDDs) in November 2009. After some time,

<sup>1</sup> "Glossary of terms used in payment systems", Committee on Payments and Settlement Systems. In the absence of a unanimously agreed definition, the threshold to differentiate between a low and high-volume transaction is commonly identified on the basis of the indication given in the Regulation 2001/2560/EC, where the threshold for a low-value payment is set at €50,000.

these instruments will completely replace those currently used in Europe to settle customer credit transfers and direct debits in euro.

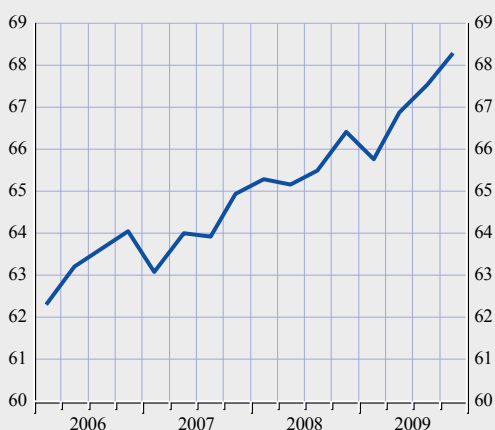
Notwithstanding its nature of LVPSs, a considerable share of the TARGET2 traffic consists of low-value payments. TARGET2 was initially developed by the Eurosystem to provide real-time payment settlement services to European banks and to serve the needs of monetary policy. However, at the launch of TARGET2, the Governing Council of the ECB chose to keep the system open “downwards” for low-value payments and to set no value limit. While there was no deliberate intention to take an active role in the processing of retail transactions, the Eurosystem acknowledged that this decision could contribute to the efficiency of cross-border settlement in the EU without adding costs to the system. Nowadays, in practice, more than two-thirds of the TARGET2 volume are payments of low value, mainly consisting of commercial payments. Chart A shows that in the last quarter of 2009, 68.4% of the payments settled in TARGET2 had a value below €50,000, with an overall increasing trend (+4.2% since the first quarter of 2006).

The share of retail transactions in TARGET2 is rather heterogeneous from country to country in the euro area. As shown in Chart B, in 2009 it ranged from a maximum of 85% to a minimum of 20% in 2009. The differences in the situation across Member States depend on the existence of alternative channels for processing retail transactions and on their ability to appropriately address the specific requirements of banks and corporates with respect to the settlement of urgent and critical retail transactions. Because automated clearing houses (ACHs) are infrastructures mainly established at the national level with the aim to meet domestic requirements, the proportion of retail payments in TARGET2 varies from country to country.

Chart B also shows that, overall, the retail transactions accounted for 65.8% of the TARGET2 volume in 2009. Breaking down this share further, 87% of the retail transactions took place between EU residents, whereas the remaining 13% consisted of payments where either the originator or the beneficiary was outside the EU. As only a small share of TARGET2 retail

**Chart A Share of transactions with a value less than €50,000 in the total TARGET2 volume**

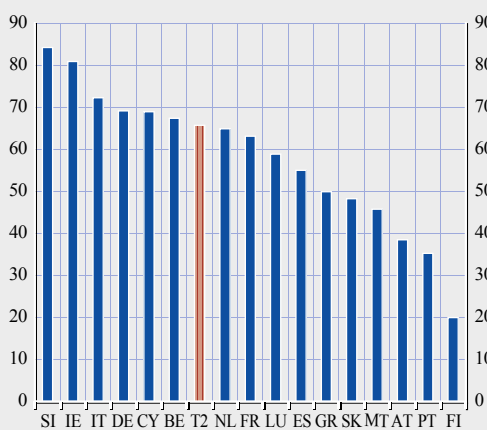
(percentages)



Source: ECB.

**Chart B Share of retail transactions in the total TARGET2 volume, broken down by country**

(percentages; euro area countries; 2009)



Source: ECB.



payments comes from, or goes out of, the EU, this means that the vast majority of retail traffic falls within SEPA.

The number of retail transactions in TARGET2 is high and has even increased in the last few years. This increasing usage is somehow unexpected, especially taking into account that TARGET2 cannot process the SEPA instruments that were recently launched for customer payments. The reasons for the growing preference for settlement of retail transactions in TARGET2 could be manifold. First, the advantages associated with the use of a real-time gross settlement (RTGS) system, namely the time-criticality and immediate finality of the transaction. Second, the additional benefits offered to TARGET2 customers, such as the speed of the system, the enhanced liquidity management features or the high security level. Finally, the fact that TARGET2 provides settlement in central bank money, an additional advantage that may play a role in critical retail transactions.

Although retail payments represent a relevant proportion of the overall TARGET2 volume, it is extremely marginal compared with the bulk of retail payments in the EU. It is estimated that the transactions settled in TARGET2 accounted for less than 0.5% of the total volume of retail transactions processed in the EU.<sup>2</sup> This is not surprising when comparing the costs associated with the use of RTGS systems to those of ACHs. Typically, the costs of the settlement services provided by RTGS systems are significantly higher than those of ACHs. For instance, TARGET2 charges a minimum of €0.125 per transaction, whereas the prices of ACHs normally range from a few cents to even a fraction of cents per item in the case of the cheapest.<sup>3</sup>

A trend similar to that observed in TARGET2 was also detected in most LVPSs of countries represented in the Committee on Payments and Settlement Systems (CPSS). For instance, in Fedwire Funds and CHIPS, the median payment size in 2005 was lower than USD 35,000 and two-thirds of the transfers were for amounts of less than USD 100,000;<sup>4</sup> in the United Kingdom, the median value in CHAPS was approximately GBP 25,000, while that in the Canadian LVTS was approximately CAD 50,000. An even more striking example is SIC, the Swiss RTGS system, where 88% of the traffic consisted of payments of up to CHF 5,000 in 2009.

This allows the conclusion to be drawn that, although RTGS systems were developed in response to large-value interbank needs, retail transactions have de facto become part of their business model. Presumably, most RTGS systems today cannot achieve their cost-recovery objective without the retail traffic. At the same time, the high share of retail traffic in RTGS systems suggests that settlement facilities offered by RTGS systems still respond to the needs associated with a considerable number of retail transactions, notwithstanding the higher price charged for the service. In particular, the developments related to the processing of customer payments in TARGET2 in the last two years underscore that there is a business case for the settlement of retail transactions in TARGET2.

2 This estimation is based on the comparison of the number of low-volume payments in TARGET2 with the total number of retail transactions in Europe, as reported in the Blue Book (2008).

3 "Size matters: economies of scale in European payments processing", *DNB Working Paper Series*, No 155, De Nederlandsche Bank, November 2007.

4 "A Summary of the Roundtable Discussion on the Role of Wire Transfers in Making Low-Value Payments", Federal Reserve Board, 16 May 2006 (available at <http://federalreserve.gov/paymentsystems/lowvaluepay/default.htm>).

## 2 TARGET2 SERVICE LEVEL AND AVAILABILITY

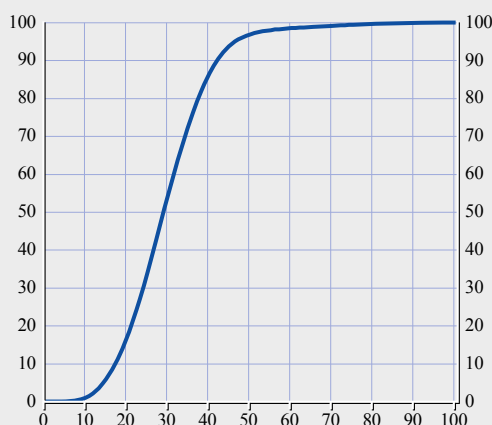
### 2.1 PROCESSING TIMES

In 2009, 99.96% of the payments settled on the SSP of TARGET2 were processed in less than five minutes.<sup>16</sup> For 0.04% of the transactions, the processing time was between five and fifteen minutes, and no payments needed more than fifteen minutes for processing. In the second half of 2008,<sup>17</sup> 99.91% of the payments were processed in less than five minutes, 0.06% took between five and fifteen minutes and 0.03% had processing times of more than 15 minutes. Comparing this with the first-generation system, the percentage of inter-Member State transactions that was processed in less than five minutes in 2007 was 97.89%. These figures illustrate the high level of performance of the SSP of TARGET2. With regard to other requests or enquiries,<sup>18</sup> 99.99% were processed in less than one minute and only 0.01% within between one and three minutes.

Chart 17 helps to better quantify the system's performance by providing the distribution of processing times on the SSP, i.e. the percentage of traffic with a processing time below a certain number of seconds. The reference taken is an average peak day at the end of a month.

Chart 17 Distribution of processing times on the SSP

(percentages)



Source: ECB.

The chart shows that on this day, 50% of the transactions were settled within 29 seconds and 90% within 42 seconds, thereby confirming the system's high level of performance. In practice, there was no significant difference between the transactions marked as "normal" priority, "urgent" or "highly urgent".

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 are already waiting for settlement, which correspond 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 of time. This huge batch of transactions normally takes between 15 and 30 minutes to be processed and up to 45 to 50 minutes on a peak day such as 30 June 2009. With a change in the processing logic implemented as part of the SSP release 3.0 by end November 2009, this effect has been reduced by about 20%.

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). In addition, attention is drawn to the possibilities offered in TARGET2 to reserve funds for highly urgent and urgent payments.

In order to neutralise the effect of the morning queue, which is considered a normal phenomenon, the first hour of operations is excluded when the TARGET2 processing times are calculated.

16 This figure covers all payments made to the payment module of the SSP, with the exception of ancillary settlement transactions using the ASI, as well as payments settled in the first hour of operations in order to neutralise the effect of the morning queue.

17 Because the migration to TARGET2 was only completed in May 2008, only figures for the second half of 2008 are reported.

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

## 2.2 TECHNICAL AVAILABILITY

The overall availability of TARGET2 was 99.9978% in 2009, compared with 99.98% in 2008 and 99.90% in 2007. The TARGET2 availability rate considers any event during which participants cannot execute payments or a slowdown affecting settlement services for more than ten minutes. This confirms the continuous progress made from year to year in terms of technical availability, as shown in Chart 18. This progress was largely supported by the 100% availability of the SSP of TARGET2.

Technical availability is not intended to measure the impact of partial outages involving the TARGET2/SSP system. For example, an incident only impacting the processing of ancillary system's transactions without having any effect on other payment processing cannot be measured with this figure, although it has an overall impact on the system's performance. However, such incidents are reported transparently and followed-up accordingly.

## 2.3 REPORTED INCIDENTS

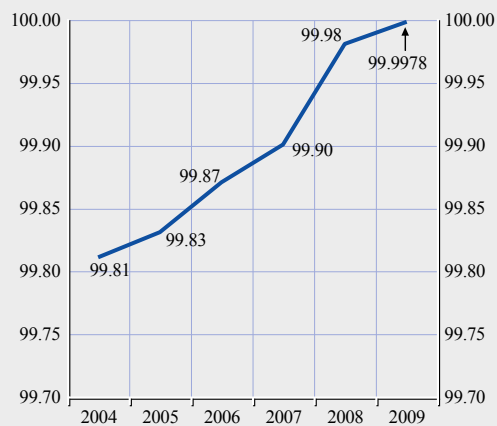
In 2009 only one incident affecting the overall availability was reported in TARGET2, compared with 33 in 2008, 48 in 2007 and 112 in 2004. The constant decrease in the number of incidents over the last six years is evidence of the Eurosystem's continuous efforts to increase the reliability of TARGET2.

Because of the technical set-up of the SSP, some incidents only partly affected the processing of transactions and did not cause any unavailability. For that reason they did not have any impact on the availability of TARGET2. In 2009 these incidents were as follows:

- On 11 March 2009, a global SWIFT problem affected the processing of SWIFTNet store-and-forward messages and did not cause any complete down time. In total, 85 outgoing messages could not be delivered immediately by the SSP and had to be resent manually by the SSP operational team.

Chart 18 TARGET availability

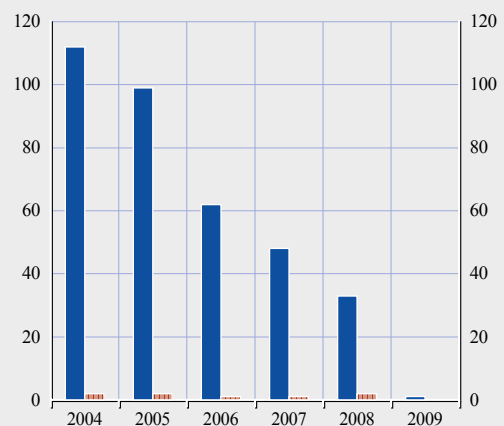
(percentages)



Source: ECB.

Chart 19 TARGET incidents and delay closing

— number of incidents  
 ■ number of delay closing



Source: ECB.

- On 29 September 2009, the installation of a new database version impacted the business of some ancillary systems. This led to a delayed acknowledgement of the timely processing of 119 ancillary system files (resolved by 11.47 a.m.) and the need to resend 17 other files out of a total of 6.888 files. In addition, during that morning, some ICM screens were subject to a limited access.
- On 25 November 2009, the settlement of payments and ancillary system transactions were taking place immediately, as usual. However, at 9.52 a.m. the confirmation messages to the TARGET2 participants experienced a delay. The blocking program was stopped and restarted, which solved the problem at 10.38 a.m.

Following these incidents, appropriate corrective measures were implemented with the aim of preventing such interruptions from happening in the future. To help users cope with such incidents, the ECB publishes up-to-date information about the availability of TARGET2 by means of the TARGET2 Information System (T2IS), which is accessible via the financial information provider Reuters (page ECB46) and via the ECB's website under the "payment and markets" section (at [www.ecb.int/paym/t2/html/index.en.html](http://www.ecb.int/paym/t2/html/index.en.html)).

## 2.4 PEAK DAYS

Fluctuations in TARGET2 flows are mainly triggered by the settlement of periodical transactions (term deposits, payment of interest, etc.) at the end of each month/quarter/year. On 30 June 2009, TARGET2 values registered a peak in both volume and value terms, with 539,336 transactions in a total value of €3,427 billion. This represents an increase of 56% in comparison with the average daily volume in 2009 and 59% compared with the average daily value settled.

Other fluctuations observed in TARGET2 flows are explained below.

- Holidays in the United States (Independence Day, Thanksgiving Day, etc.) generally result in lower traffic than usual, as no EUR/USD deals can be settled on these days.
- TARGET2 non-operating days (details in Annex 1) generally result in higher volumes on the preceding and following days because no settlement in euro can take place when TARGET2 is closed.

Where major public holidays are celebrated simultaneously in several euro area countries on days which are not TARGET2 holidays (e.g. Whit Monday, Ascension Day or Assumption), there is less traffic than usual because of the general reduction in economic and financial activities.

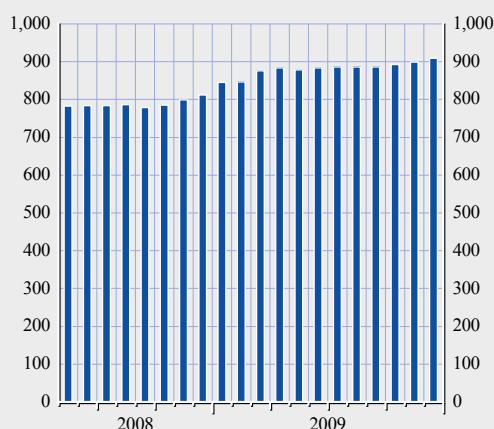
## 3 TARGET2 PARTICIPANTS

### 3.1 DIRECT PARTICIPANTS

By 31 December 2009, a total of 800 direct participants had opened an RTGS account on the SSP of TARGET2. These direct participants registered 3,687 indirect participants from European Economic Area (EEA) countries, as well as 9,988 correspondents worldwide. When the branches of the direct and indirect participants are added to these figures, 51,803 credit institutions around the world are addressable via TARGET2, which represents

Direct participation	800
Indirect participation	3,687
Multi-addressee – credit institution	81
Multi-addressee – branch of direct participant	1,323
Addressable BIC – correspondent	9,988
Addressable BIC – branch of direct participant	17,714
Addressable BIC – branch of indirect participant	18,210

**Chart 20 Number of RTGS accounts in TARGET2**



Source: ECB.

more than 50% of the banks connected to SWIFT worldwide. 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 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.

The number of RTGS accounts opened on TARGET2 (which encompasses the direct participants, the ancillary systems and the special-purpose accounts) has continued to increase since the completion of the migration to TARGET2 in May 2008. In total, 120 new RTGS accounts were opened in the last 18 months, bringing the number of accounts

to more than 900. The explanation for this phenomenon is twofold. First, a number of central banks started to phase out the activity on their local PHAs and some PHA participants, not yet being direct participants on the SSP, decided to open an RTGS account on the SSP. This was the case, in particular, in Belgium and Portugal in 2009 and will also be the case in all the other countries still operating a PHA until the end of the transition period in 2012 (cf. Section 1.9). Second, the Slovakian banking community, which connected to TARGET2 on 2 January 2009, brought 28 additional direct participants to the system.

### 3.2 ANCILLARY SYSTEMS

At the end of 2009, a total of 71 ancillary systems were settling in TARGET2, 33 of which were retail payment systems/clearing houses and 23 were securities settlement systems. The vast majority of these systems – 69, to be precise – were settling directly on the SSP of TARGET2, while the other two were settling temporarily on the proprietary home accounting system (PHA) of a national central bank. Of those ancillary systems settling on the SSP, 48 were making use of the ancillary system interface (ASI), a feature which was developed to facilitate and harmonise the cash settlement of these systems in TARGET2. The use of the six available ASI models is shown in the following table.

ASI settlement model	Use <sup>1)</sup>
Model 1 – Liquidity transfer	2
Model 2 – Real-time settlement	15
Model 3 – Bilateral settlement	16
Model 4 – Standard multilateral settlement	17
Model 5 – Simultaneous multilateral settlement	13
Model 6 – Dedicated liquidity	14
PI – Payment interface	21

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

## 4 TARGET2 REVENUES

### 4.1 ANALYSIS OF THE REVENUES COLLECTED

The new 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 were billed on a monthly basis in application of the single pricing structure, which applied to payment transactions initiated both on the SSP and on the proprietary home accounting systems<sup>19</sup> of the national central banks. Based on 2009 figures, the following observations can be made.

- The SSP alone generates 98.6% 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.
- 85% of the direct participants in the SSP opted for the flat fee option (i.e. option A), while 15% opted for the degressive fee option (i.e. option B).<sup>20</sup> This illustrates that TARGET2 was capable 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 135 direct participants that opted for option B generate around 88% of the traffic on the SSP. As a result of this concentration effect, 28% 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 greatly from the attractive degressive fee option offered by TARGET2 and from the competitive group pricing offers.<sup>21</sup>
- Transactions exchanged between credit institutions generate around 92% of

TARGET2 volumes, with the remaining 8% attributable to ancillary system transactions.

### 4.2 COST RECOVERY OBJECTIVES

The objective set by the Governing Council is that TARGET2 should recover all its costs (with the exception of a public good factor) over the six-year amortisation period, i.e. between May 2008 and April 2014. 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 increase by an average of 6% per year. This means that TARGET2 should have processed 96.77 million transactions in the calendar year 2009, an objective that was not met in view of an actual volume of transactions that was 9.71 million lower. Nevertheless, it is premature to draw conclusions about the system's cost recovery as 2009 was heavily impacted by the overall economic slowdown and by exceptional market conditions. The cost recovery is not set as an annual objective, but rather as an average over the six-year amortisation period. As long as the surplus of revenues in the forthcoming years can offset this temporarily lower performance, the final objective may still be achieved. For that reason, it is not envisaged to amend TARGET2's core pricing for the time being.

<sup>19</sup> These cover bank-to-bank payments, as well as ancillary system settlement and open market operations.

<sup>20</sup> Option A (i.e. a monthly fee of €100 and a flat transaction fee of €0.80) targets 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.

<sup>21</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.



## 5 TARGET2 RISK MANAGEMENT AND OVERSIGHT ACTIVITIES

### 5.1 TARGET2 RISK MANAGEMENT

Information security risk management is a key element of the governance structure of TARGET2. In order to meet this governance responsibility, the Eurosystem has established a comprehensive risk management framework comprising, inter alia, 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.

The consistent use of the dynamic modules and processes of the TARGET2 risk management framework reassures users that the overall security situation in TARGET2 will be kept at a satisfactory level.

Risk management<sup>22</sup> is not static. The business and technical environment in which the TARGET2 system operates is constantly changing, and new threats and vulnerabilities can occasionally emerge. Hence, the “TARGET2 risk management framework” was developed, comprising processes for the continuous monitoring and reviewing of the risk situation throughout the life-cycle of the second-generation system TARGET2.

TARGET2’s risk management processes aim to monitor developments in order to ensure that progress on the implementation of security controls in response to issues resulting from risk assessments is satisfactory. Another objective is to learn from operational experience and ensure that appropriate measures are taken to prevent an incident from reoccurring. Finally, risk management aims to proactively identify new threats and initiates deliberations regarding the implementation of additional security controls in order to prevent these from materialising.

Updated information obtained from the risk management processes is reported on a regular

basis in the form of an action plan. Progress made with regard to the implementation of mitigating measures listed in the action plans is monitored with the aim of ensuring that satisfactory progress is being made and of creating awareness of any potential security problems that might arise.

In conclusion, the consistent use of the dynamic modules and processes of the TARGET2 risk management framework reassures the Eurosystem, as well as TARGET2 users, that the overall security situation in TARGET2 will be kept at a satisfactory level. In this context, it is worth mentioning that no incidents that seriously affected the security and operational reliability of TARGET2 were observed in 2009.

### 5.2 OVERSIGHT ACTIVITIES

The migration from the decentralised architecture of the first-generation TARGET system to the technically centralised platform of TARGET2 led to some amendments in the allocation of tasks and responsibilities between the oversight function of the ECB and the oversight functions of the participating national central banks. The Governing Council of the ECB tasked the ECB’s oversight function with leading and coordinating all TARGET2 oversight activities. The ECB overseers act in close cooperation with the overseers from the participating national central banks. The latter remain responsible for the conduct of 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 voluntary basis.

The comprehensive assessment of the TARGET2 design against the relevant oversight standards,<sup>23</sup> which was initiated in 2006, reached its final phase in 2008. The interim results of

<sup>22</sup> In the context of this section, risk management concerns information security issues. It does not cover the management of financial risks (i.e. credit and market risks).

<sup>23</sup> These standards comprise the Core Principles for Systemically Important Payment Systems and the Eurosystem’s Business Continuity Oversight Expectations for Systemically Important Payment Systems.



this comprehensive assessment were submitted to the decision-making bodies of the ECB in April 2008. While the overall outcome of the assessment was positive and did not reveal any serious concerns regarding the compliance of the TARGET2 design with the applicable Core Principles, the report highlighted a small number of issues that still needed to be addressed by the operator. It was decided that the assessment should be finalised and that the results should be published in the first half of 2009, based on further investigations by the TARGET2 operation function in relation to open issues on the basis of an agreed action plan.

In November 2008, the TARGET2 operations function reported on the status of the investigations carried out in order to address open oversight findings. Most of the issues raised have since been addressed by TARGET2's system operator. Although some oversight findings require some further action on the part of the operator (investigation of technical options for the real-time synchronisation of the two processing regions and the provision of additional collateral in contingency processing, as well as work on operational overhead costs, on change and release management, on the involvement of users in the future development of TARGET2 and on the level of cost recovery for the liquidity pooling functionality), these issues are not having an adverse impact on the design of TARGET2 – which seems, overall, to be well-established – or its full compliance with the Core Principles. Moreover, the operation of the proprietary home accounting systems settling specific payment transactions is not having an adverse effect on the smooth operation of TARGET2 or its compliance with the Core Principles.

Throughout 2009, the ECB – in close cooperation with the overseers from the participating national central banks – conducted both regular and ad hoc oversight activities of TARGET2. The regular activities covered mainly the monitoring of the system performance, including the analysis of incidents, statistical data and information on the risk situation.

With regard to ad hoc activities, the Governing Council approved the final report on the “Oversight assessment of the TARGET2 design” in May 2009. The report concluded that the design of the system appeared to be well-established and to meet the relevant oversight standards at a high level. Some oversight recommendations are being followed-up by the TARGET2 operator in line with the agreed action plan. A version of the assessment report was published on 15 May 2009.

Furthermore, following the publication of the Business Continuity Oversight Expectations (BCOE) for systemically important payment systems (SIPS) in May 2006, the SIPS operators were expected to implement and test the oversight expectations by June 2009. As regards TARGET2, the overseers concluded that the business continuity framework of the system was generally well established and ensured a high level of resilience. Nevertheless, the TARGET2 oversight function issued a few recommendations to the TARGET2 operator.

Other ad hoc TARGET2 oversight activities concerned the implementation of the SSP software release 3.0, the connection to TARGET2 of Slovakia, and the impact of the financial crisis.

The national central banks of Austria, Belgium, Germany, Greece, Lithuania, Poland and Portugal reported to the ECB on the oversight activities performed with respect to their proprietary home accounts (PHAs) in 2009. All national central banks confirmed that no additional risks had been identified in 2009 and that risks remaining in PHAs were at a level acceptable to them.

Considering the results of both the comprehensive TARGET2 oversight assessment against the Core Principles and the assessment of TARGET2 against the BCOE, and taking into account the stable operational performance of TARGET2 throughout 2009, the overseers concluded that the overall risk situation of TARGET2 was satisfactory.

## CRITICAL PARTICIPANTS

### Critical participants in TARGET2 – regulatory requirements

Like any other large-value payment system (LVPS) that operates within the euro area, TARGET2 is subject to a comprehensive oversight framework. This general principle is stipulated in the “Eurosystem Oversight Policy Framework” published on 20 February 2009.

In order to perform its oversight responsibilities with respect to LVPSs effectively, the above-mentioned policy framework specifies that the Eurosystem applies the “Core Principles for Systemically Important Payment Systems” (SIPS) and the “Business continuity oversight expectations” (BCOE) as oversight standards.

Core principle VII (referred to as “CP VII”), in turn, assigns certain responsibilities to the operators of a payment system which need to be fulfilled. CP VII states, inter alia, that the “[...] operators of a payment system [...] need to concern themselves not just with the security and operational reliability of the components of the central system, but also with the components of the system’s participants.”

Additionally the BCOE require that “[...] the SIPS operator and, where relevant, the participants and infrastructure service providers should plan arrangements to ensure continuity of the service in a number of plausible scenarios, including major disasters, outages or disruptions covering a wide area” and also state that “[t]he technical failure of critical participants in the system may induce systemic risk. For this reason, it is recommended that participants which are identified as critical by SIPS operators should also have a secondary site.”

Against this background, the Eurosystem, in its capacity as owner and operator of TARGET2, has developed a concept to ensure the security and operational reliability of TARGET2 participants, which is included in the “Information guide for TARGET2 users” (Info Guide).

### Definition of criteria for critical participants

Acknowledging that the impact of a security failure affecting the systems of financial institutions can vary, depending on the market share in terms of value and/or the type of transactions processed, this concept makes a distinction between normal players and critical participants.

TARGET2 participants can be broken down into the following groups: credit institutions, ancillary systems and service bureaus/concentrators. For each group, criteria were defined to identify which of the players should be considered critical.

As far as ancillary systems are concerned, they play a major role in TARGET2 with respect to both the safety and the efficiency of the financial system as a whole and citizens’ confidence in the euro. For that reason, all ancillary systems – except retail payment systems classified as prominently important retail payment systems (PIRPS) – are considered critical participants.

With regard to credit institutions, the definition of criteria to distinguish a critical credit institution from a non-critical one logically depends on the contribution of that credit institution to the system's turnover in terms of value. According to the agreed methodology, a credit institution would be seen as critical for TARGET2 if it consistently settles at least 2% of the system's turnover on a daily basis. Furthermore, the accumulated market share of critical credit institutions should reach at least 25% of TARGET's turnover. If this was not the case, credit institutions settling less than 2% but more than 1% of TARGET's turnover would be added to the list of critical institutions until the 25% threshold is reached.

Although the Eurosystem has provisionally concluded that service bureaus/concentrators are not considered critical participants as such, it seems advisable that, if the total payments traffic routed via such an organisation were to exceed the 2% criterion applicable to credit institutions, it should be treated like a critical participant.

### 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 aims to 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 to TARGET2. This also applies to components that are beyond this interface but of crucial importance for the smooth flow of payments in accordance with internationally recognised standards such as ISO/IEC 27002:2005. Compliance with other standards focusing on information security might also be acceptable.

In addition to compliance with security standards, critical participants must have a business continuity strategy in place that comprises the following major elements: business continuity plans, alternate site with a risk profile different from that of the primary site, procedures to ensure that the most critical business transactions can be performed while moving business from the primary to the alternate site, and a business continuity testing strategy.

TARGET2 participants classified as critical will need to confirm compliance with these requirements by means of a specially prepared document, a "Self-certification statement" (Annex III to the Info Guide).

### Practical dimensions of the process for the identification of critical participants in TARGET2

The process of identifying critical participants in TARGET2 is currently ongoing. The process is based on a two-step approach.

In a first step, the list of ancillary systems was established in November 2009. Following the establishment of this list, central banks sent the "Self-certification statement" to all ancillary systems classified as critical, inviting them to sign and return it within the three-month deadline, as specified in the Info Guide.

In a second step, critical credit institutions and service bureaus will be identified and subsequently invited to complete the “Self-certification statement” as well. This activity should be completed in the second half of 2010.

Further information on the security and operational reliability of TARGET2 participants and the associated procedures can be obtained from the Info Guide published on the ECB’s website.

## 6 SYSTEM EVOLUTION

2009 was an intensive year in the field of TARGET2 release management. Major activities can be broken down into three groups:

- the establishment of the annual TARGET2 release management process;
- the implementation of two new system releases; and
- the definition of the content for the annual TARGET2 release in 2010.

### 6.1 ESTABLISHMENT OF THE ANNUAL TARGET2 RELEASE MANAGEMENT PROCESS

The Eurosystem, in cooperation with users, established the annual release management process with the aim of keeping the TARGET2 system in line with the various business changes in the field of large-value payments. In general, TARGET2 releases take place annually and coincide with the annual standard SWIFT releases in November. In exceptional circumstances, however, it is possible for an intermediary release to be scheduled (i.e. two releases in the same year), or for no release to be issued in a given year.

The annual TARGET2 release is a long process, which takes place over a 21-month period in order to give all parties enough time for discussion, prioritisation, implementation and testing. Furthermore, information is made available to participants early enough to allow for a proper planning and budgeting of all changes. More information on the TARGET2 release management process, including

the involvement of the user communities, is available in Chapter I (see Box 1).

### 6.2 IMPLEMENTATION OF RELEASES 2.1 AND 3.0

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 release in 2009 (release version 3.0) took place within the framework of regular TARGET2 annual releases on 23 November, enhancing the system’s real-time online monitoring tool, queue management, the ancillary systems functionality and implementing the new message standard MT202COV, among other new features.

### 6.3 DEFINITION OF THE CONTENT FOR THE ANNUAL TARGET2 RELEASE IN 2010

Having considered the users’ feedback received in the two consultation rounds in March/ April and September/October 2009, the Eurosystem finalised the content of the SSP release 4.0, which is planned to go live on 22 November 2010. A total of eight change requests were selected for the release. The foreseen changes will further enhance the ancillary system functionalities and the real-time online monitoring tool of TARGET2. It is also foreseen to implement a new functionality that will allow small banks to connect to the SSP of TARGET2 via a secure internet connection.

The internet-based participation will consist of a browsing functionality for https traffic and

an interactive and authenticated messaging service using XML standards, allowing the small banks to monitor their account balances via the information and control module (ICM). The ICM would also be used for entering outward payments via specific ICM screens. After the necessary checks, these transactions would be converted by the SSP into SWIFT FIN Y-Copy payment message, which would subsequently follow the standard processing of a TARGET2 payment. For inward flows (i.e. incoming transactions,

notification, reporting), a similar mechanism would be in place to convert the messages.

The internet-based access will be offered on an optional basis and priced separately. The costs stemming from that development will be fully recovered by those institutions that use it (i.e. full cost recovery with no subsidisation across TARGET2 services). More information on the envisaged internet-based access to TARGET2 is available in Box 5.

#### Box 5

##### INTERNET-BASED ACCESS IN TARGET2

The Eurosystem is developing internet-based access to TARGET2 to meet the needs of small and medium-sized European banks. It will consist of an alternative connection mode to the Single Shared Platform (SSP) that offers direct access to the main TARGET2 services without, however, requiring a connection to the SWIFT network. Even though they have low-volume payment traffic, some smaller European institutions may be interested in holding an account with the central bank. This will materialise particularly in the countries where the proprietary home accounts (PHAs) will be phased out.

After the migration to TARGET2, some national central banks decided to retain a local proprietary accounting system, on a transitional basis for a maximum of four years. The vast majority of the PHA customers are small and medium-sized institutions that hold the PHA account to access the central bank's services or to comply with the reserve requirements. Once a PHA is discontinued, these small and medium-sized institutions will need to hold an RTGS account with their national central bank in order to continue to have direct access to monetary policy operations.

This business need was reinforced by the events that hit the financial markets in the last two years. As a consequence of the shortage of liquidity during the financial crisis, an increasing number of banks resorted to their national central banks for liquidity refinancing. For instance, the average number of participants that took part in the Eurosystem's main refinancing operations (MROs) grew by more than 30% from 2007 to 2008, with peaks during the second half of 2008 when bids were received by around 850 banks for several consecutive MROs. Even more striking is the case of the long-term refinancing operation carried out on 24 June 2009, when the full amount was allotted to the 1,121 bidders, a number far higher than that of TARGET2 direct participants (800 at the end of 2009). Taking into account that one of the main objectives of TARGET2 is to serve the needs of monetary policy, these events underscored the importance of offering an option for direct access to TARGET2 to several smaller institutions that are currently not directly connected.

Thus far, a number of small and medium-sized European banks have refrained from going through the process of obtaining a full-fledged SWIFT connection on account of cost considerations. In

view of the low volume of payments they generate, these institutions would be placed in the lower tier by SWIFT and would not be able to reap the benefits associated with SWIFT's digressive pricing scheme. A user consultation carried out by the Eurosystem in 2009 confirmed the high interest of banking communities, especially that in Germany, in connecting to TARGET2 on the basis of an access designed for low-volume users.

To address this need of small and medium-sized banks, the Eurosystem decided to offer alternative access to TARGET2 based on the internet. Legally speaking, internet-based participants will be direct participants and will hold an RTGS account with their national central bank, but will be subject to some functional restrictions in comparison with participants connected with the standard SWIFT connection. To give a general overview, internet-based participants will be able to monitor their RTGS account via the information and control module (ICM) and to issue TARGET credit transfers via specific ICM screens, including MT103 and MT202. They will be able to manage limits and reservations, as well as to manage queues, and to settle their position in the ancillary system's settlement. Conversely, they will not be able to issue direct debits, nor to download the TARGET2 directory that can only be accessed online.

Although it encompasses a limited range of features compared to the standard SWIFT connection, the internet-based access will ensure a comparable level of security. The total confidentiality and integrity of the messages are preserved via an encryption functionality and non-repudiation will also be granted. The user authentication will be based on certificates that will be issued by a recognised certification authority, acting on behalf of the Eurosystem on the basis of an agreement with the participating central banks.

The service will be available as from 22 November 2010 and will be offered as an optional service. The price will consist of a fixed monthly fee of €70, but this will be reviewed on the basis of actual use after one year. The Eurosystem expects that around 800 participants will then be connected to TARGET2 via the internet.

While the internet-based access will considerably increase the number of direct participants in TARGET2, it is not likely to have a major impact on the turnover of the system. According to the survey that was conducted last year, a vast majority of the interested banks intend to use the internet-based connection for the management of an account for special purposes (e.g. for carrying out operations with the central bank), and will not be active in terms of payments business. It is therefore expected that most internet-based participants will not subscribe to publication in the TARGET2 Directory.

## 7 FURTHER INFORMATION

More detailed information on TARGET2 can be found in the "Information Guide for TARGET2 users" and in previous versions of the "TARGET Annual Report". All relevant documents and reports can be accessed on the ECB's website (<http://www.ecb.europa.eu>) and the websites of the national central banks. As a new method of

providing information, two TARGET2 newsletters were published by the Eurosystem in June and December 2009.<sup>24,25</sup> Further information is also available from the following address: [target.hotline@ecb.europa.eu](mailto:target.hotline@ecb.europa.eu).

<sup>24</sup> Available at: [http://www.ecb.europa.eu/paym/t2/shared/pdf/20090619\\_T2newsletter.pdf](http://www.ecb.europa.eu/paym/t2/shared/pdf/20090619_T2newsletter.pdf).

<sup>25</sup> Available at: [http://www.ecb.europa.eu/paym/t2/shared/pdf/t2newsletter\\_q4.pdf](http://www.ecb.europa.eu/paym/t2/shared/pdf/t2newsletter_q4.pdf).

Box 6

**MAIN TARGET2 INDICATORS IN 2009**

In 2009, TARGET2 had 800 direct participants, 3,687 indirect participants and 9,988 correspondents.

TARGET2 settled the cash positions of 71 ancillary systems.

TARGET2 processed a daily average of 345,768 payments, representing a daily average value of €2,153 billion.

The average value of a TARGET2 transaction was €6.2 million.

Two-thirds of all TARGET2 payments (i.e. 65%) had a value of less than €50,000 each.

The peak in turnover was on 30 June 2009, with 539,336 payments.

TARGET2's share in total large-value payment system traffic in euro was 89.4% in value terms and 60.3% in volume terms.

The overall availability of TARGET2 was 99.9978%, while the SSP availability was 100%.

99.96% of TARGET2 payments were processed in less than five minutes.





# ANNEXES

## I FEATURES AND FUNCTIONALITIES OF TARGET2

### SYSTEM STRUCTURE

A modular approach has been 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 are used (FIN, InterAct, FileAct and Browse) to enable standardised communication between the TARGET2 system and its participants.

### 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 and sophisticated business contingency arrangements in line with the systemic importance of the TARGET2 infrastructure.

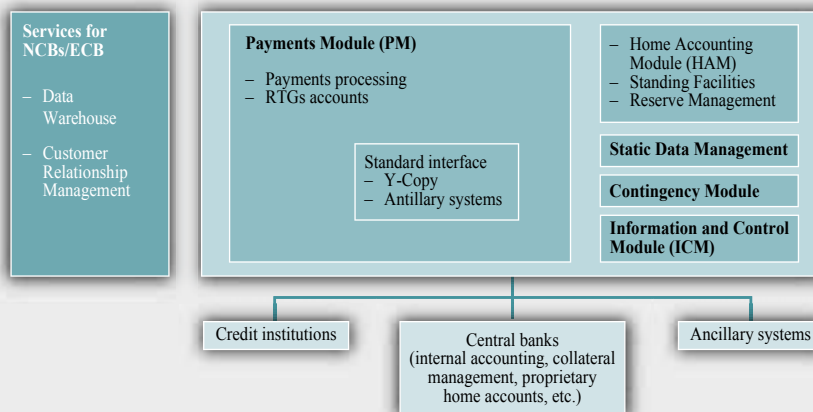
### PARTICIPATION

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

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

- (i) submit/receive payments directly to/from the system; and
- (ii) settle directly with their respective national central bank. 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

Chart I.1 Structure of the SSP



Source: ECB.

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 status. It is the responsibility of the direct participant to forward the relevant information to the appropriate national central bank 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 has been granted).

Finally, 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 for 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 MT 103/103+, MT 202/202COV and MT 204. Every payment order can be assigned a specific payment priority ("normal", "urgent" and "highly urgent"). In addition, ancillary systems connected via the ancillary system interface (ASI) 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 working days in advance.

Unless participants have indicated a settlement time, payment orders are settled immediately or at least by the end of the business day, provided that sufficient funds are available and no liquidity limits and/or reservations are opposed. 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 where 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 by-passing principle. This means

1 For routing purposes, an indirect participant/addressable BIC can only be linked to one direct participant.

2 The TARGET2 Directory distinguishes between indirect participants and addressable BICs.

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 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 national central bank 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 the settlement of ancillary systems. 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 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 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 information option, payment amounts are checked only against the liquidity available on the individual RTGS account of the sending participant. In this option, the liquidity available on other accounts in the group is not used to settle the payment. In the event of insufficient liquidity on the sending bank's account, money needs to be transferred to that account.

Only credit institutions directly participating in the system are able to use the consolidated 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 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 all kinds of ancillary system, 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 the settlement of ancillary systems (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, in addition to Saturdays and Sundays, 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 has the same operating dates and times as the first-generation TARGET system. 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 6.45 a.m. CET the next day, with a technical maintenance period of three hours between 10 p.m. and 1 a.m. CET. The night-time window<sup>3</sup> facilitates the night-time settlement

of the different ancillary systems in central bank money with finality, and also supports cross-system settlement during the night. During the night-time window, liquidity transfers via the ICM between RTGS accounts and the dedicated sub-accounts are technically possible. Ancillary systems and their participants are able to choose whether or not to enable this liquidity transfer functionality, or to limit the functionality. Alternatively, banks may decide not to participate in night-time settlement. The night-time window generally increases the efficiency of night-time settlement and favours initiatives such as cross-system delivery versus payment.

### PRICING

The pricing scheme for TARGET2 core services is as follows:

<b>Option A</b>			
Monthly fee			€100
Flat transaction fee			€0.80
<b>Option B</b>			
Monthly fee			€1,250
Band	Volume		Price
	From	To	
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 information option) is an optional and separately priced core service. The liquidity pooling service is charged at €1,200 per account per annum for the consolidated information option and €2,400 per account per annum for the aggregated liquidity option (which includes the consolidated information option). Furthermore, within a group of accounts (with either the consolidated 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.

<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.

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 BIC of account of the direct participant
Unpublished account in the Payment module of the SSP	Direct participants which do not wish their BIC to be published in the TARGET2 directory will pay €30 per account to the monthly fee above

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.

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

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

All national central banks, irrespective of their individual migration dates, have applied TARGET2 prices since 19 May 2008, i.e. since the third migration group joined the shared platform.

1 A) Monthly fee plus regressive transaction fee			1 B) Monthly fee plus flat transaction fee		
Monthly fee:			€1,250	Monthly fee: €100	
Band	From	Volume (monthly) To	Transaction fee:	Flat rate transaction fee:	€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 million/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/TARGET2

### 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 national central banks 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 national central banks would hold settlement accounts for banks, although the ECB would also be connected to the national central banks 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 linkages would be established between national RTGS systems. These linkages (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 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 which can be accepted by the national central banks 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 payments; and (iii) to avoid undue competition within TARGET.

### AUGUST 1996

In summer 1996 the EMI further defined the features of TARGET, in particular in 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 national central banks 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 that 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 national central banks 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 national central banks 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 between 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 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 in 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 national central banks 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.

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>

4 Namely: (i) non-euro area national central banks would receive, and would provide to participants in their respective RTGS systems, only limited intraday credit, and the size of the limit may be zero. 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; (ii) 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; (iii) 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.

7 See also EMI Annual Report, May 1998.

With regard to one of the possible mechanisms for the provision of intraday liquidity to non-euro area national central banks, namely an earlier closing time for non-euro area national central banks 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 national central banks, 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 national central banks.

#### 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 between 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 national central banks 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 national central banks and their RTGS participants, the ECB decided that, at all times, non-euro area national central banks would have to maintain an overall credit position vis-à-vis the other national central banks 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 national central bank would have to make an intraday deposit with the Eurosystem.

#### NOVEMBER 1998

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

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

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

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

<sup>9</sup> See "The single monetary policy in Stage Three: General documentation on ESCB monetary policy instruments and procedures", ECB, September 1998, and the latest version entitled "The implementation of monetary policy in the euro area: General documentation on Eurosystem monetary policy instruments and procedures", ECB, September 2006.

possible. At their own discretion, national central banks could decide to grant intraday credit to investment firms, subject to a formal spillover prevention arrangement. Any arrangement under which an national central bank 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 (EPM).

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 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 went live successfully. 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+.

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

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

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

<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.

## 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 national central banks. 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 national central banks of the other participating Member States and the ECB.<sup>16</sup>

## APRIL 2001

In accordance with its policy of transparency through the publication of its legal instruments, the ECB published the Guideline of the ECB on TARGET (TARGET Guideline).<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 on 5 November 2001. On the same day, the Bundesbank launched RTGSplus, the new German TARGET component replacing the former Euro Link System.

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.

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

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

<sup>17</sup> Guideline of the European Central Bank of 26 April 2001 on a Trans-European Automated Real-time Gross Settlement Express Transfer system (Target) (ECB/2001/3). OJ L 140, 24.5.2001, p. 72. The Guideline is also available on the ECB's website.

<sup>18</sup> A negative PSMN provides the rejection code (reason for the rejection).

## NOVEMBER 2002

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

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

## DECEMBER 2002

The Eurosystem launched a public consultation on 16 December 2002 to collect the views of the entire community of TARGET users on the approach to be chosen for TARGET2, as well as on its service level.<sup>19</sup>

## JANUARY 2003

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

## JULY 2003

A summary of all the responses to the public consultation ("TARGET2: Principles and structure"), together with the individual contributions, was published on the ECB's website on 14 July 2003.<sup>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

<sup>19</sup> "TARGET2: Principles and structure".

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

account a change in the SWIFT validation rule for IBAN, which came into force on the same day. The change consisted of adding a further six countries.

#### **DECEMBER 2004**

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

#### **MARCH 2005**

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

#### **NOVEMBER 2006**

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

#### **JANUARY 2007**

Slovenia joined the euro area. For efficiency reasons, Banka Slovenije decided not to develop its own euro RTGS system, but to use 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 national central banks 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 national central banks and the respective TARGET user communities in Belgium, Finland, France, Ireland, Netherlands, Portugal and Spain – successfully connected to TARGET2.

#### **MAY 2008**

On 19 May 2008 the third and final migration group – comprising the national central banks 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, the SSP release 2.0 went live on Monday, 17 November 2008. The elements constituting the 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) took place together with the regular annual releases on 23 November, enhancing the system's real-time online monitoring tool and implementing the new message standard MT202COV, among other new features.



## 3 GENERAL TERMS AND ACRONYMS

### COUNTRIES

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

### OTHERS

ASI	Ancillary system interface
BIC	Bank Identifier Code
BIS	Bank for International Settlements
CCBM	Correspondent central banking model
CCBM2	Collateral central bank management (the second-generation CCBM)
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 System
EMU	European 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, FX	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
MAC	Message authentication code
MT103	Message type
MT103+	Message type
MT202	Message type
MT202COV	Message type
NMP	National migration profile
NSS	Net settlement system
PM	Payment module
PSMN	Payment settlement message notification
PSMR	Payment settlement message request
PSPWG	Payment Systems Policy Working Group
PSSC	Payment and Settlement Systems Committee
PvP	Payment versus payment
Repo	Repurchase operation
RTGS	Real-time gross settlement
SFD	Settlement Finality Directive
SSP	Single Shared Platform
SSS	Securities settlement system
STP	Straight-through processing
SWIFT	Society for Worldwide Interbank Financial Telecommunication
SWIFTNet	Store and forward messaging
FIN	Service for financial institutions on the SWIFTNet platform
TARGET	Trans-European Automated Real-time Gross settlement Express Transfer system
TARGET2	Second-generation TARGET system
T2S	TARGET2-Securities system
TCP/IP	Transmission control protocol/ internet protocol
T2IS	TARGET2 information system
TWG	TARGET Working Group
UDFS	User detailed functional specifications
WGT2	Working Group on TARGET2

## 4 GLOSSARY

**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**.

**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.

**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.

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

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

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

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

**Collateral central bank management (CCBM2):** The Eurosystem's harmonised solution for collateral management that is based on a common technical platform.

**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 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 a national central bank, 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.

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

**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.

**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 pay in the currency it sold, but not receives the currency it 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 materialised. See Herstatt risk).

**Gridlock:** A situation which can arise in a fund or securities transfer system, in which the failure of some transfer instructions to be executed (because the necessary funds or securities balances are unavailable), prevents a substantial number of other instructions from other participants from being executed. See also queuing, systemic risk.

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

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

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

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

**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 uniquely to 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 STP, with a minimum amount of change within domestic schemes.

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

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

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

**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).

**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 because of 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.

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

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

**MT202COV:** The MT202COV is a general-use message, which means that no registration in a Message User Group is necessary 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 is aimed at a given system (e.g. a funds transfer system) rather than at individual participants. It also covers payment instruments.

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

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

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



**Payment settlement message notification (PSMN):** The response to a payment settlement message request (PSMR) (see below), which can be either positive or negative. It is normally positive (indicating that the beneficiary's settlement account in the receiving national central bank'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 national central bank/the ECB and PSMNs (see above) from the receiving national central bank/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 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 processing:** The processing of instructions at the time they are received rather than at some later time.

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

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

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

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

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

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

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

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

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

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

**Single Shared Platform:** 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.

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

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

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

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

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

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

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

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

## 5 ADDITIONAL TABLE AND CHARTS

Table 5.1 Distribution of payment flows in TARGET2 – 2009

	2009				2008			
	Value <sup>1)</sup>	%	Volume	%	Value <sup>1)</sup>	%	Volume	%
AT	7,266	1.3	1,674,048	1.9	15,128	2.2	3,634,896	3.8
BE	27,027	4.9	2,180,243	2.5	39,019	5.7	2,530,317	2.7
CY	392	0.1	99,609	0.1	250	0.0	100,252	0.1
DE	171,299	31.1	44,698,117	50.5	248,816	36.4	46,496,052	49.1
DK	3,741	0.7	187,924	0.2	5,545	0.8	179,182	0.2
EE	87	0.0	19,137	0.0	13	0.0	5,787	0.0
ES	91,062	16.5	7,572,363	8.6	84,771	12.4	9,258,779	9.8
EU	11,942	2.2	79,793	0.1	11,905	1.7	45,228	0.0
FI	7,229	1.3	422,817	0.5	8,366	1.2	406,232	0.4
FR	93,759	17.0	7,618,586	8.6	101,931	14.9	6,653,934	7.0
GB					6,969	1.0	597,987	0.6
GR	7,464	1.4	1,457,164	1.7	7,683	1.1	1,309,918	1.4
IE	7,752	1.4	1,234,879	1.4	8,063	1.2	1,315,611	1.4
IT	32,241	5.8	8,658,889	9.8	56,680	8.3	9,341,569	9.9
LT	98	0.0	24,347	0.0	39	0.0	17,077	0.0
LU	10,298	1.9	728,776	0.8	15,388	2.3	777,445	0.8
LV	194	0.0	169,638	0.2	71	0.0	149,803	0.2
MT	1	0.0	15,158	0.0	26	0.0	12,826	0.0
NL	73,475	13.3	9,453,999	10.7	67,523	9.9	9,662,805	10.2
PL	132	0.0	207,179	0.2	112	0.0	144,767	0.2
PT	4,250	0.8	1,072,696	1.2	3,987	0.6	1,298,317	1.4
SI	586	0.1	786,768	0.9	495	0.1	772,596	0.8
SK	880	0.2	155,211	0.2				
	551,176	100	88,517,341	100	682,780	100	94,711,380	100

Source: ECB.  
1) EUR billions.

Chart 5.1 Intra-day pattern of interbank payments in 2009 – value

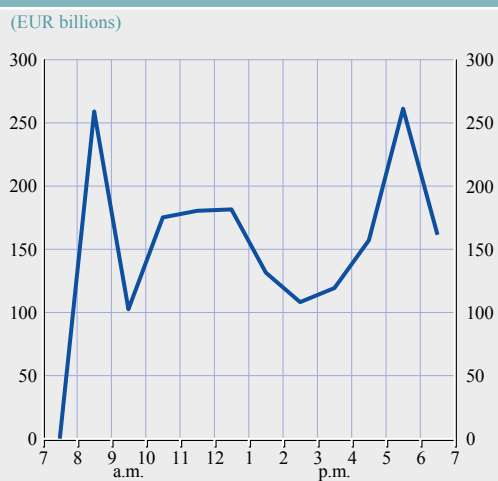


Chart 5.2 Intra-day pattern of customer payments in 2009 – value

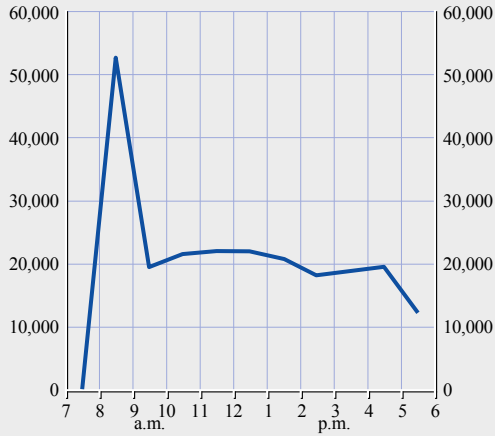


**Chart 5.3 Intra-day pattern of interbank payments in 2009 – volume**



Source: ECB.

**Chart 5.4 Intra-day pattern of customer payments in 2009 – volume**



Source: ECB.

