# The Functioning of the Payment System

## Basis for presentation by Karsten Biltoft at the seminar on "EMU halfway Through the Transition Period: Experiences and Perspectives" in Barcelona on 18 and 19 September

### Introduction

Today, most payments consist of electronic transfer of information and book-entries. The domestic financial infrastructure in the EU is generally highly developed, with large and small value systems, central securities depositories and modern exchanges. Until recently, the cross-border infrastructure was virtually non-existent. Central banks have traditionally played an important role in payment systems. This role has been based on both the operational and the oversight responsibilities of central banks.

Payment systems for transfer of funds between banks can be divided into two main categories: real-time gross settlement systems and net settlement systems.

In a real-time gross settlement system (RTGS), the banks send their payment orders to e.g. the central bank on a continuous basis. Each payment is settled immediately and finally via the banks' accounts with the central bank.

In a net settlement system, the banks on an ongoing basis send their payment orders to a clearing centre. One or several times a day the latter calculates the net position of each bank. The banks then settle their accounts, e.g. via accounts with the central bank.

The two types of system have both advantages and drawbacks. In a net settlement system, the payments are not final until clearing and settlement have taken place. On the other hand, the liquidity requirement, and thereby the costs, are higher in a gross settlement system. A bank, which in the course of one day is to send and receive three payments each of Euro 50 million, will have no liquidity requirement in a netting system. On the other hand, in a gross settlement system it might require liquidity of up to Euro 150 million if the bank cannot itself determine the transmission time.

### The payments landscape

The last decade or so has seen a significant increase in cross-border financial transactions as banks develop into more and more multinational businesses. The technological development, and not least the development of information technologies, has strengthened this trend and has both put pressure on and opened up possibilities for the development of financial infrastructures both within and across borders.

Also, there has in recent years been a growing awareness of financial risks and the need to control these. Within the payments industry, this could result in the move of payments from correspondent banking into formalised payment systems, although this move has not yet materialised on a larger scale.

The introduction of the Euro has reinforced these developments and has opened up for a major change of the wholesale payments landscape in the EU (and more specifically within the Euro area). Earlier, payments in a given European currency could only be settled with finality on the books of that currencies central bank. Now, all 15 EU central banks can be used as the starting point for RTGS-payments in Euro. Transfers can be made throughout the EU as quickly as domestically. On top of this, banks can choose between several competing non-RTGS payment routes.

The introduction of the Euro has also catalysed the consolidation of the securities trading infrastructure. Hardly a day goes by without the international financial newspapers bringing news of mergers and co-operation between stock exchanges or central securities depositories.

Besides TARGET, five other systems will be discussed here. In the present environment where safety is a prime concern, TARGET has its advantages, although it is normally more expensive to use than the netting systems.

Some 35.000 banks can be reached through TARGET, which has roughly 5.000 direct members and 30.000 indirect members.

Euro1, the pan European net-settlement system (with intra-day finality) has around 70 participants from the entire EU.

Furthermore, there are four national systems. EAF, a hybrid system of the Bundesbank, has some 67, mainly German, members. PNS is a French hybrid system with 23 (18 French) members. Finally, POPS (Finland) and SEPI (Spain) are smaller national netting systems.

The payment systems mentioned here are all viable alternatives to the traditional correspondent banking net. The correspondent bank system is the classical system for transaction of cross-border payments. Under this system, the banks hold accounts with each other for settlement of payments in other countries. For example, a Danish bank may settle a payment in Germany by drawing on its account with its German correspondent bank.

**TARGET – a few details**

In order to support the single money market, the introduction of the Euro gave rise to a need for fast and safe transfer of large amounts in Euro within the Euro area. The two main objectives of TARGET are to facilitate monetary-policy transactions in the Euro area, and more generally to ensure faster, safer and cheaper cross-border payments in Euro. The central banks of the countries, which do not participate in the Euro, are also participants in TARGET.

TARGET is constructed by linking the national RTGS-systems via the so-called inter-linking module. Communication between national RTGS-systems is done via the S.W.I.F.T.-network, which is the dominating international network for financial transactions. National systems do not have to be SWIFT-based.

Payments between e.g. two Danish participants are done within the Danish RTGS-system, while payments between e.g. a Danish and a German participant are done in the Danish and the German systems.

TARGET processes more than 160,000 payments per day for a total value exceeding Euro 1.000 billion.

The central banks are in close contact with TARGET users, both on national (via e.g. national user groups) and EU (via regular meetings of the ESCB with market participants).

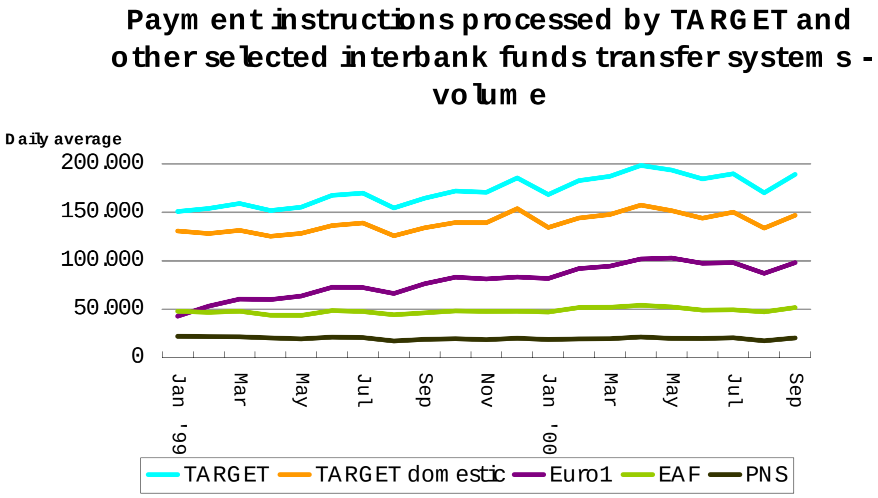
A central bank user survey from November 1999 showed general satisfaction with TARGET so far even though improvements could be made in some areas, including the system's stability, more information on problems and easier liquidity management. In the follow-up, a number of initiatives have been launched.

An important development looming in the horizon is CLS which, through among other things its tight pay in/out schedules, will pose increasing demands on both participants and systems – not least on stability.

**Payment instructions in selected funds transfer systems, volume and value**

There has been a general increasing trend in terms of volume for both TARGET, TARGET cross-border payments and EURO1 whereas the number of payments in EAF and PNS have been relatively stable, see Chart 1.

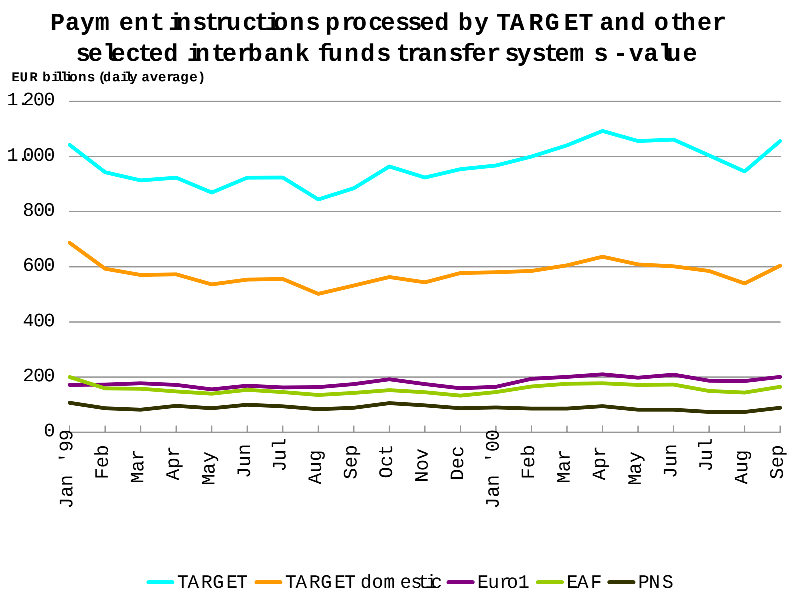
Chart 1




The majority of TARGET payments are domestic, and EURO1 may be the preferred system for cross-border payments.

In terms of value, TARGET is more dominating reflecting the fact that TARGET is mainly a system for larger payments, see Chart 2. The difference between domestic and cross-border payments are larger for value than for volume reflecting the fact that cross-border TARGET-payments are generally larger than domestic ones.

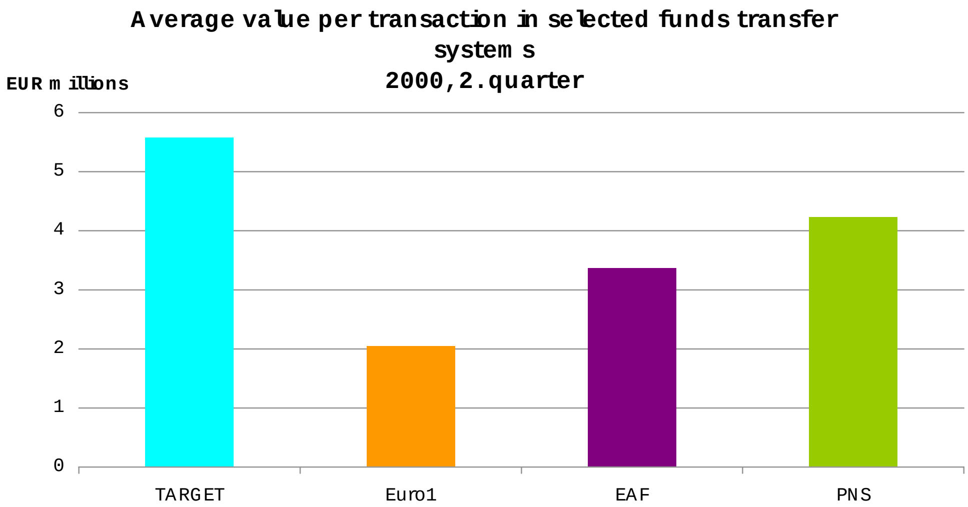
Chart 2




The average payment size in EURO1 is relatively small, and even though EURO1 has experienced significant growth in the volume of payments, the development in the value of payments processed is more or less stable. This reflects the fact that low value customer payments account for most of the increase in EURO1 traffic. TARGET has also experienced some growth in customer traffic. From the beginning of EMU, the banks have made substantial use of the formalised payment systems for inter-bank and financial transactions (which are generally of higher value), whereas low-value commercial payments only move gradually from correspondent banking to the formalised systems.

Another interesting feature to consider in addition to market shares is the average payments in the various systems, see Chart 3. Payments in TARGET are somewhat larger than in the other systems. In safety terms, TARGET is the most appropriate choice for large-value payments.

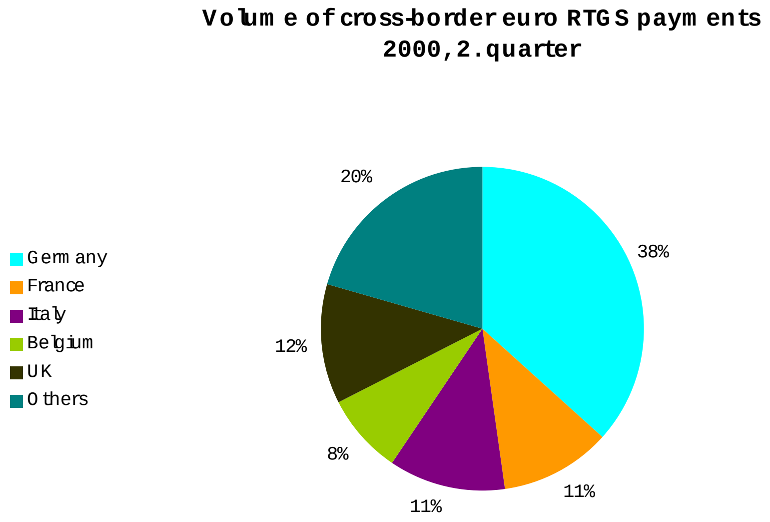
Chart 3




In part, the relatively high level of average transaction size in PNS and in EAF reflects the greater proportion of FX-transactions in these systems compared to EURO1.

Cross-border payments have increased since the start of operations in TARGET, see Chart 4. Not surprisingly, the large Euro area member states account for the largest share, but the UK also has a large share, reflecting the status of London as a financial centre. The relatively large share for Belgium reflects Euroclear operations

Chart 4




**Cross-border retail payments**

As mentioned, most European countries have payment systems, which can settle domestic payments quickly and effectively. However, the situation is different for payments across national borders. Cross-border payments often take considerably longer and cannot take place quite as safely and cheaply as payments within a country's borders. Most cross-border retail payments in Euro are still settled via the correspondent bank system. As a result, retail payments are associated with excessive costs for the ordinary consumer and the volume is equivalently lower.

The ECB describes this problem in a recent report. It appears from the ECB survey that the cost of even small cross-border payments in Euro is between Euro 3.5 and Euro 26. Previous surveys showed an average completion time for payments of almost 5 days, which still appears to be the case.

The ECB finds that the high prices are due to the lack of formalised systems for cross-border payments, and insufficient standardisation of retail payments between countries, e.g. as regards account numbers. Both aspects entail a considerable degree of manual processing of the payments, which is expensive. In the first instance, the banks should undertake the tasks of establishing the necessary structures and common standards.

The ECB has established seven objectives which the banks are expected to fulfil via the development of the market for cross-border payments, including convergence of completion time for domestic and cross-border systems, significant reduction in prices and free access to cross border retail systems. In early September, the ECB published a progress report on the developments within the area. The conclusion is clear: even though serious improvements have not been experienced yet, the banking sector has shown commitment to move forward and has already taken action in several areas.

The European Commission issued an equivalent statement of objectives in the beginning of February, and the Commission has already promoted a certain level of harmonisation. Also, the Commission recently conducted a survey of cross-border retail payments within the Euro area. Like in the ECB report, this survey did not point towards significant improvements in the price nor the execution time of these payments.

## Conclusions

Not least as a result of the introduction of TARGET, the payments system for large-value cross-border transactions is functioning very well, with further refinements coming in the period ahead. The other main conclusion is that there is still considerable way to go before execution of cross-border retail payments is satisfactory. However, banks are committed to making progress.