Recent trends in individual payments

Since November 2001 the Deutsche Bundesbank has been operating RTGS^{plus}, the biggest individual payment system within TARGET, the real-time gross settlement system of the European Union central banks. Each day in RTGS^{plus} around 170 participating banks settle roughly 140,000 payments with a value of more than €500 billion. Thus, RTGS^{plus} is a key factor in the infrastructure of Germany as a financial centre. Having explained the concept of RTGS^{plus} in July 2000 and described its initial experiences with the system in April 2002, in this article the Bundesbank presents individual payment systems from a broader perspective. The article starts by illustrating the significance of individual payment systems for central banks, outlining the most important stimuli behind the dynamic transformation which has been observed over the past few years. Exogenous factors, such as the introduction of the euro and the global threat of terrorism, have played a major role. The article then goes on to identify considerable innovations in and changes to individual payment systems and concludes by discussing some current issues.

Central banks in individual payment systems

Significance for central banks ...

Unlike retail payment systems, individual payment systems are characterised by high turn-

over and fast processing, which frequently allow immediate settlement of payments in real time. As well as processing payments which arise from interbank transactions, banks also use these systems for urgent customer payments which in former times would have been authorised telegraphically and need to be transferred as quickly as possible from the transferor's bank to the beneficiary's bank. Owing to the high volumes, individual payment systems are extremely important for the financial stability of a country. Apart from a few private providers, it is mainly central banks that act as system operators since individual payment systems are also of primary importance to monetary policy, the effects of which are felt on the money market. An efficient money market requires that central bank money – ie balances on accounts held at the central banks – can be moved quickly and safely between banks. Owing to the high degree of liquidity of central bank money and central banks' resistance to insolvency, these payment systems are particularly suitable for the settlement of transactions processed on other markets (eg securities markets) or in other systems. Operating the system themselves gives central banks the advantage of being able to control the design of these important systems taking into account risk and efficiency. Furthermore, as players of the banking industry geared towards the common good, they offer competitively neutral and open access to their payment systems.

... and for the Deutsche Bundesbank

The mandate stating that the Bundesbank shall arrange for the execution of domestic and international payments, which has been enshrined in section 3 of the Bundesbank Act since 1957, underlines that in the area of payments the Bundesbank is to act solely in the public interest and is not to pursue any commercial objectives. This legal basis has since been supplemented by Article 105 (2) of the Treaty establishing the European Community (EC Treaty) and Article 22 of the Statute of the European System of Central Banks (ESCB) and of the European Central Bank (ECB), which explain that one of the tasks of the ESCB is to promote the smooth operation of payment systems. The statutory provisions of the European Union (EU) also provide that the Bundesbank is to act in accordance with the principles of an open market economy.

The Bundesbank fulfils its legal mandate in the field of cashless payments by assuming three different functions, all of which ultimately contribute to the high degree of security and efficiency in German payments. Firstly, as part of the general payment policy, the Bundesbank acts as a catalyst and facilitator of current developments. Secondly, it assumes the role of payment systems overseer – a task which has taken shape in the past few years as a result of increasing emphasis on the potential risks involved in operating payment systems. Thirdly, the Bundesbank also operates its own payment systems. While its liquidity-saving real-time gross settlement system, RTGS^{plus}, is of key importance to the German financial sector owing to its pronounced relevance to monetary policy and financial market stability, the Bundesbank plays only a complementary role in retail payments with its RPS system (Retail Payment System).

Individual payment systems in a state of flux

Increasing competition, cost pressures and the integration of regional markets are the driving forces behind the rapid developments in individual payment systems and also signify a particular challenge for the Bundesbank.

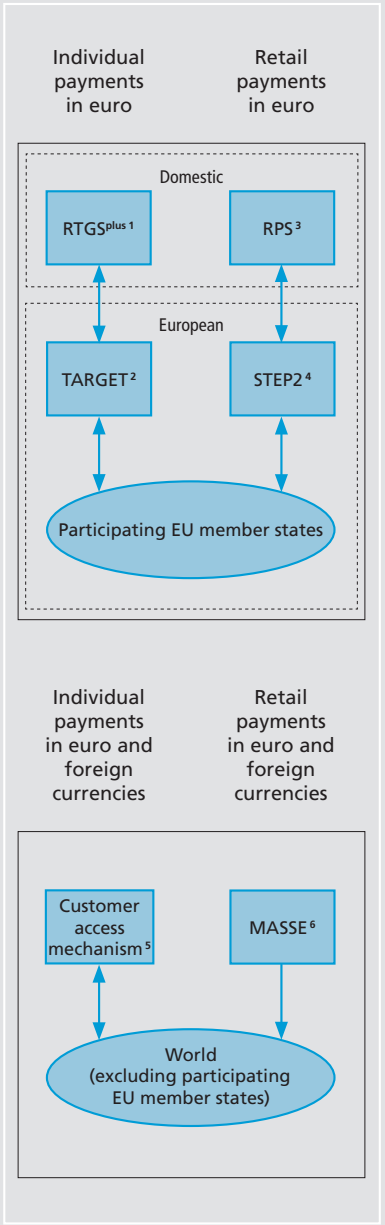
User's influence

In particular, the users' influence on the ongoing development of payment systems has increased, not least as a result of greater emphasis on cost/benefit considerations. The Bundesbank has been implementing changes to existing systems or creating new systems in response to customer requests for some time. The high level of acceptance and the widespread use of systems operated by the Bundesbank are attributable not least to this strong focus on the market's and the customers' needs. The close cooperation with the banking industry resulted in the introduction of numerous innovative and trend-setting systems. For example, the net system Electronic Access Frankfurt (EAF) launched in 1990, was expanded to form the hybrid system EAF 2 in 1996 and ultimately transformed into the liquidity-saving real-time gross system RTGS^{plus} in 2001.

Legal and regulatory framework requirements

Important stimuli for increased security and efficiency in payment systems also came from new legal and regulatory framework requirements. These mainly included the "Core Principles for Systemically Important Payment Systems" adopted by the G10 central banks in 2001. They define principles for the design and operation of payment systems, which must be observed and implemented by

Settlement of payments via the Deutsche Bundesbank



1 Real-time gross-settlement system with liquidity-saving elements. — **2** Real-time gross-settlement systems of the EU central banks. — **3** Retail Payment System. — **4** Pan-European clearing system of the Euro Banking Association. — **5** Access procedure to RTGS^{plus} and TARGET; settlement of correspondent banking payments. From November 2005. — **6** Special procedure for public authorities.

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the respective system operators. Compliance with these principles is checked by the central banks as part of their function as overseer. Furthermore, statutory measures taken largely at the EU level have helped to reduce legal risks in payments. Thus, pursuant to the Settlement Finality Directive of 19 May 1998, payment orders and any netting are legally enforceable even in the event of insolvency proceedings against the participant. However, payment systems profit from this protection only if they have been notified to the European Commission in accordance with the provisions of the Directive.

Technological progress

Information technology plays a key role in the ability to use customer requirements concerning payment transactions to improve the range of services. Only the technological progress of the past few years has made so many trend-setting developments possible. Nowadays, infrastructure and software components are less expensive and considerably more efficient, thus creating the basis for the development and implementation of new functionalities. This is especially evident in internet technology, which allows users of individual payment systems – similar to online banking customers – total transaction transparency by providing up-to-date information in real time and ensuring fast and simple interaction with the system.

Structural changes in the banking industry

The changing structure of banks and financial markets is having a considerable impact on individual payment systems. Mergers and acquisitions, in particular, are resulting in increased concentration of the settlement of payments. Although, on the one hand, this may raise operational efficiency and improve the use of liquidity, on the other hand, there is greater potential risk if technical disruptions occur or creditworthiness deteriorates. Furthermore, the system operators must anticipate lower payment volumes and – for cross-border acquisitions – take account of more pronounced international lines of development.

Introduction of the euro

The introduction of the euro in 1999 has certainly had the most lasting impact on payment systems in Europe. On the supply-side, two new cross-border individual payment systems, the TARGET system of the EU central banks and the EURO1 system of the Euro Banking Association (EBA), were created. TARGET consists of 17 EU national real-time gross settlement systems (RTGS), including the German RTGS^{plus} system. Ultimately, these pan-European infrastructures have increased the flexibility of European banks in deciding on various clearing options. At the same time, traditional (cross-border) correspondent banking in Europe has become much less important, especially since the first pan-European clearing house for retail payments, STEP2, started operating in 2003.

From the outset, the TARGET system has been evolving into the leading system in Europe. In 1999 around 160,000 payments (including domestic payments) with a value of almost €1 trillion were settled on average each day. Since then transaction volumes have steadily increased. In 2004 around 1,500 banks routed on average roughly 270,000 payments a day, amounting to €1.7 trillion, via TARGET.

Negative external events

However, the terror attacks of 11 September 2001 had a lasting impact on the infrastructural development of the financial system, too. The attacks in New York, as well as those in Madrid and London, have clearly shown that terrorism has reached a new international dimension, representing a great potential risk to the financial system. This applies especially to those payment and clearing systems which are systemically important because of their function or their turnover volumes. Furthermore, the power failures in the United States, Canada, Italy and Sweden have made it evident that the functional viability of systems can be directly threatened. In response to these events, business continuity plans, which enable operations to continue as normal in emergency and disaster situations, have been vigorously pursued.

Recent developments in the system design of individual payment systems

Three significant lines of development

Until the 1980s individual payment systems were dominated by net procedures. In net systems payments are exchanged between banks during the day and initially only cleared. The final settlement of the participants' debit and credit positions takes place in central bank money at the end of the day to save liquidity. In the wake of the sharp rise in payment volumes and the increasing internationalisation of financial flows, global awareness of the risks of such net procedures increased. These risks occur above all when a participant is unable to meet its payment obligations at the end of the day. The credit and liquidity risks arising from the necessary reversal of payments may result in a systemic risk. Consequently, the "Committee on Interbank Netting Schemes of the Central Banks of the Group of Ten Countries" at the Bank for International Settlements (BIS) laid down minimum requirements for cross-border netting procedures in the "Lamfalussy Report" in 1990. As a result, efforts were intensified to reduce payments risks, resulting in the creation of three lines of development, which all ultimately address the trade-off between low risk owing to rapid payment settlement and lowest possible costs owing to a low use of liquidity.

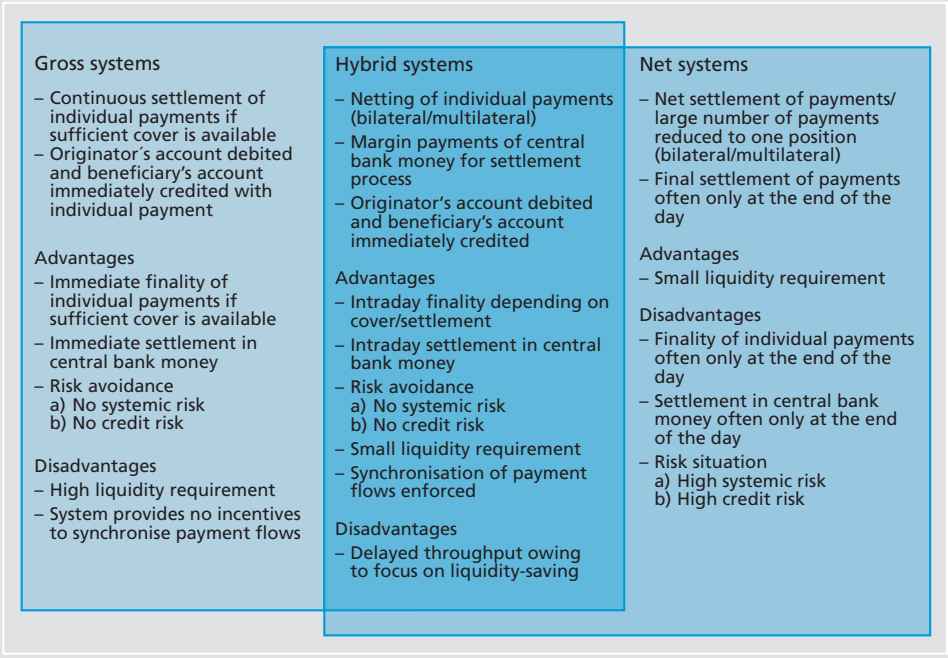
Secured net systems

Secured net systems – an example being the EURO1 system of the EBA – retain the traditional processing logic of net systems and allow payments to be settled at low liquidity costs using the principle of bilateral or multilateral clearing. Various security mechanisms have been put in place to alleviate the associated credit and liquidity risks. These include, for example, defining bilateral and multilateral credit limits to restrict the overall position of a participant throughout the day, depositing collateral to cover any shortfalls and setting up a loss-sharing scheme among participants.

Hybrid systems

The first hybrid systems appeared in the mid-1990s. These are net systems which have been enriched with elements from the RTGS systems, thus allowing payment only once the funds are available. The EAF 2, introduced by the Bundesbank in 1996, was the template for a development which has since been taken on by the French PNS system (Paris Net Settlement, 1999) and the American CHIPS

Definitions of payment systems



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system (2001). A crucial element of the EAF 2 was that individual payments were effected in short intervals with immediate finality. Since offsetting payments did not usually match exactly, to settle the difference in the amounts, recourse was made to central bank money which was provided in advance in limited amounts by the participant. With the aid of efficient algorithms which took advantage of the two-way flow of offsetting payments a very low level of liquidity of only DM3 billion was needed to settle a delivery volume of more than DM715 billion.

Advanced real-time gross settlement systems

The third line of development was the real-time gross settlement systems, whose design includes liquidity-saving and liquidity-managing elements, thus rendering hybrid systems superfluous. The Bundesbank was also a pioneer of this development. In 2001 it integrated its gross system ELS (Euro Link System) with the hybrid system EAF 2 to form the new liquidity-saving RTGS^{plus} system. The concept has since been realised in other countries (eg BIREL in Italy). In these new, advanced real-time gross settlement systems, as in the traditional real-time gross settlement systems, all submitted payments are processed as they are received and settled with immediate finality as long as there is sufficient cover. Owing to the continuous use of algorithms, offsetting payments from other participants may also be extensively used as cover in addition to the participant's credit balance on its central bank account and the intra-day credit provided by the central bank. This ensures a timely and liquidity-saving execution of payments throughout the day. Fur-

thermore, advanced real-time gross settlement systems offer participants a wide range of options for managing their liquidity.

TARGET 2

The introduction of the euro should enable the development of a Single European Payments Area alongside the single euro area. The TARGET system, founded in 1999, made a first positive contribution to this integration. However, it quickly became clear that the decentralised structure consisting of the 17 RTGS systems as the national TARGET components has a structural disadvantage since, from a cost and performance perspective and owing to potentially vulnerable system stability, an optimal market supply cannot be ensured in the medium term. The enlargement of the EU by ten countries on 1 May 2004 aggravated this problem. The ESCB begun working on a new TARGET generation (TARGET2) in 2002. The European banking industry expressly requested a single TARGET2 platform. The associated technical consolidation, broad harmonisation of services and standardisation of interfaces would offer all European credit institutions a similarly high level of services and, as a result of the concentration of payment flows, in particular, would allow pan-European liquidity management. In October 2003 the Bundesbank and the central banks of France and Italy submitted a common offer to develop and operate such a TARGET2 platform, which was adopted by the Governing Council of the ECB on 16 December 2004. This offer was based on the idea of retaining key conceptual modules from present systems, for example the RTGS^{plus} processing logic, in the future TARGET2 system. TARGET2 will therefore fall into the category of an advanced real-time gross settlement system. All the Eurosystem central banks as well as the central bank of Denmark and some of the new EU member states will use the TARGET2 single platform from the outset.

Cross-border individual payments

Beyond the currency borders, too, the first signs of greater integration as a result of the increased interlinking of economic activity are becoming apparent. For example, since September 2002 the Continuous Link Settlement (CLS) system has been used for the cash settlement of international foreign exchange transactions in 15 different currencies. CLS has achieved a market share of around 30% – measured in terms of global foreign exchange transactions. The 100,000 transactions carried out daily involving two currencies are simultaneously settled according to the payment-versus-payment (PVP) principle. This eliminates the foreign exchange settlement risk. The participants must provide central bank money in advance in order to settle transactions. This involves close cooperation between the CLS system and the respective RTGS systems of the central banks operating in the various time zones. Ultimately, CLS requires that the participants exercise precise and global liquidity management.

Another new concept is the development of standardised arrangements for settling payments in foreign currencies by banks. These procedures have features of payment systems but may also be considered as specific correspondent banking. There may be a need for such arrangements in international financial centres (such as Hong Kong). They may, how-

ever, also be employed by countries which maintain a high volume of payment transactions with neighbouring countries, but where domestic banks are unable to participate in the neighbouring countries' payment systems for legal reasons. An example is the Swiss Euro Clearing Bank (SECB) domiciled in Frankfurt and the settlement arrangements "EuroSIC" that it uses to allow Swiss credit institutions to settle euro payments among themselves and with EU countries. Furthermore, in future the fact that, owing to globalisation, an increasing number of payment flows are concentrated at a few large banks may well be of significance.

Focus on liquidity management

Objectives of the settlement process

In addition to being as cost-effective as possible, individual payment systems must also resolve the classic trade-off between low-level liquidity requirements and fast execution. Modern individual payment systems, such as RTGS^{plus} and TARGET2, attempt to satisfy these two objectives equally using highly developed processing logic and a wide range of information and control options. Consequently, the participant is responsible for and has precise control over its liquidity position and payment flows. As a general rule, a whole series of different parameters are available for this purpose.

Convenient information and control options for liquidity and payment flows

– Payment processing is controlled by assigning priorities. These are often specified by the participants when they transmit the payment. In some cases, such as the central bank's monetary policy operations, the system can also assign priorities.

– The participant can reserve a certain part of its liquidity resources for particularly time-critical payments, ie the settlement of securities transactions.

– Payments can often be submitted a few days in advance or assigned an exact execution time.

– Using sender limits the participant can restrict the amount of liquidity to be paid out to certain participants. If these limits have been reached, further payments for the participant are only executed once the counterparty makes its own payments. As a result of this, a high synchronisation of payment flows and consequently liquidity-saving processing are possible. For the counterparty, sender limits are an incentive to submit payments early; on the whole they help to reduce risks in payments and thus contribute to financial stability.

– In TARGET2 it will also be possible for the participants to combine several accounts into one group which may allow a consolidated overall view of liquidity, or additionally, be used as a liquidity pool in the individual accounts.

Throughout the day, the participant can change its parameters, for example, the amount of the limits can be adjusted or the priority of a payment can be upgraded or downgraded. Specific payment-related par-

ameters can, however, only be changed as long as the payment has not been executed with finality. A web-based interactive information and control module is often used as a technical aid. This enables the participants to view their current account balance at any time, display the processing status and the details of a payment or monitor their ingoing and outgoing queues. This transparency enables the participant to obtain an exact assessment of the current liquidity position and a projection of the future liquidity position.

Highly developed settlement mechanisms

A high payment throughput and an optimal use of available liquidity can be achieved in modern individual payment systems by implementing highly developed clearing mechanisms. An attempt is made to execute pending payments owing to lack of cover as quickly as possible. RTGS^{plus} uses complex mathematical procedures, which either attempt to continuously identify offsetting payment flows at very short intervals or work on an event-oriented basis. The latter is the case, for example, if the order of the queue is changed or if new payments submitted by other participants can be used to cover pending payments.

Broader access to intraday liquidity does not make liquidity-saving elements obsolete

For both the central banks of the G10 countries and in the Eurosystem, the spectrum of eligible collateral for intraday credit has been broadened several times in the past few years. For example, the Eurosystem's standard list of eligible collateral was extended on 1 July 2005 to include euro debt instruments issued by G10 countries not participating in EMU, and from 1 January 2007 bank loans will also be eligible. The resultant extended access to intraday credit, which is interest-free in the Eurosystem, does not render liquidity savings and management elements of modern individual payment systems obsolete. Regardless of their liquidity position, credit institutions can enforce offsetting payments by setting limits, thus preventing their counterparts from claiming the sender's liquidity. Moreover, peak loads in the liquidity requirement and increasingly conflicting demand for central bank money by securities settlement systems and foreign exchange systems can be more effectively and conveniently intercepted.

Technical communication and infrastructure

Use of SWIFT

The technical communication between participants and the system is very important for a sophisticated payment system. Standardised, secure and cost-effective means of communication must be found. The standards for messaging established by SWIFT[1] have dominated individual payment systems for some time now, allowing highly automated straight-through processing for all parties. However, many payment systems now also use the SWIFTNet communication service provided by SWIFT for payment flows, information and management. SWIFT provides a sophisticated, highly secure and highly available network with worldwide coverage (over 200 countries) which is also used by eight of the G10 countries for sending messages in their national real-time gross settlement sys-

1 Society for Worldwide Interbank Financial Telecommunication.

tems. However, this induces increased risk if SWIFT is unavailable. Thus, in the context of payment systems oversight, the central banks have committed SWIFT to providing comprehensive pre-emptive measures to ensure business continuity in the event of an emergency or a disaster.

Business continuity provisions

The rise in potential external dangers is reflected in the considerable improvement in business continuity concepts and pre-emptive measures, particularly in the area of systemically important payment systems. One of the initial focal points was the preparation of effective communication concepts in crisis situations. Now all participants are under obligation to prepare for a number of different scenarios for restarting systems and resuming business operations. Wide-area disaster scenarios must also be reckoned with. The future TARGET2 concept will counter this threat by splitting operations between four locations in two distant regions.

Securities settlement systems and other systems settling in central bank money

Increasing importance of central bank money

Besides the individual payment systems operated by the central banks, there are also a number of other systems used to settle financial transactions. Securities settlement systems, in particular, play a significant role. According to the international standards for payment systems oversight, the settlement of systemically important payment systems and the monetary settlement of securities should be carried out preferably in central bank money. Although the use of commercial bank money is also possible, it is increasingly less attractive given the high degree of security and liquidity of central bank money. As a general rule, real-time gross-settlement systems operating in central bank money are used for settling payments or balances of other systems. The way they interact can be set up in different ways.

Various models possible

Using the interfaced model, the transactions of participants in the securities settlement systems are settled by interacting with the relevant payment systems in central bank money. By contrast, in the integrated model, the central bank outsources its account services for the cash leg of securities settlement to the securities settlement system, and the central bank money accounts held there are managed only by the banks. In Germany a guarantee model is used, in which the potential debit positions are secured by central bank liquidity provided in advance (or by a guarantee from the Bundesbank for the corresponding amount) without account management being outsourced to the securities settlement system.

Governance; participant structure

Majority ownership and operation by central banks

For almost all individual payment systems, the central banks act as owner and operator. The advantage of this is that payments can be settled easily in central bank money via central bank accounts. In some cases, such as the French PNS, the Belgian ELLIPS and the UK CHAPS sterling/euro, the payment systems (sometimes without account management) are jointly owned by the central banks and

the private sector. In addition, there are also some examples of privately operated individual payment systems, such as CLS, EURO1 and CHIPS (United States), which have to use one of the real-time gross-settlement systems of the central banks for the ultimate settlement of payments in central bank money. The Swiss SIC system is a special case, whereby the central bank has formally outsourced the operation of the real-time gross-settlement system and account management to the private sector. However, de facto responsibility lies with the Swiss central bank, which, through various contracts, was able to ensure an overriding degree of influence on the system (including the right to have a say in system changes and the oversight of the system's daily operations).

Situation in TARGET2

The future TARGET2 system of the EU central banks will also present a special case. Although payment system operations will be largely concentrated on platforms operated by the German, Italian and French central banks (3CB), the principle of decentralisation in the ESCB will be reflected by the fact that each central bank in the ESCB will remain fully responsible for maintaining the business relations to its own customers. In fact, the EU central banks will be outsourcing the operation of the system to the single shared platform operated by the 3CB. Unlike outsourcing to a commercial third party, this is not a traditional form of outsourcing, but a specialisation within the ESCB, which may pave the way for setting up service centres at the specific central banks of the ESCB.

Open and fair access to individual payment systems

All individual payment systems set certain access criteria in order to prevent risks or achieve a favourable service level for the system. As a general rule, these criteria must be objective and publicly disclosed. Central banks, in particular, ensure that these access criteria permit fair and open access not only nominally but in practice, too. In this way, all banks, even smaller institutions, can be offered direct and competitively neutral access to interbank clearing.

Moreover, in view of the increasing complexity of system concepts, direct participation entails considerable investment costs, which may not be feasible for some smaller banks. In such cases, these banks resort to an indirect participation by using a direct participant to settle their individual payments. Owing to its nature, this is a correspondent banking relation, which may be of strategic importance in associations, such as the savings bank and cooperative bank sectors in Germany. From a risk policy perspective, a widespread use of indirect participation may mean that payment flows are concentrated on a smaller number of direct participants and that payments are settled in their books – and thus in commercial bank money.

Ultimately, there is no clear guideline for the desired ratio between direct and indirect participants. Rather, it depends on the bank structure in the relevant country, on individual cost/benefit ratios and other traditional factors. Therefore, the spread of direct participants ranges from around 7,800 banks in the US Fedwire system to less than 20 participants in the CHAPS system in the UK.

Germany lies somewhere in between with around 170 direct RTGS^{plus} participants.

Individual payment systems still in a state of flux

24-hour operations

Particularly intense discussions are currently underway with regards to the operating times of individual payment systems. For example, the Swiss SIC system is already open 24 hours for submission of payments and 23 hours for processing. Moreover, the US Fedwire system recently extended its operating times to 22 hours. Longer operating hours may make the payment systems more attractive by creating a higher processing capacity and allowing better interaction with other financial market segments (eg securities transactions). Operational risks for system operators and participants may also be reduced and available liquidity and computer centre services used more efficiently. However, extending the operating hours means considerably higher costs. Therefore, for TARGET2 the intention is to offer only limited night-time services, the sole purpose of which will be the settlement of ancillary systems. The European banking industry, in particular, has made it clear that from a cost/benefit viewpoint, it sees no initial need for TARGET2 to be fully open throughout the whole night.

Retail payments and individual payments in one system

Against the background of technological developments, many observers expect a closer integration of the individual payments and retail payments segments in the near future. Individual payment systems are characterised by the speed and security of their payment processing, which is reflected in a relatively high settlement price. However, the fact that these systems are used not solely for large payments is evident, for example, in the German RTGS^{plus} system: more than 70% of all payment orders are for amounts of less than €50,000 and almost 30% for amounts less than €2,500. At the same time, the processing times in European retail payment systems have been reduced further partly in response to statutory provisions but also as a result of innovative providers mostly in the smaller EU member states. Some retail payment systems already offer additional daytime processing cycles, which allow a same-day settlement. Given that nearly all larger countries still have separate systems for individual and retail payment systems and that the settlement costs for retail payments play a particularly major role, it is still likely to be several years before retail payments can also be settled in real-time.

Restrictions on outsourcing central bank money

Central banks have a substantial interest in the most widespread use of secure and highly liquid central bank money. However, central banks hold the monopoly for providing central bank money. In order to profit from the advantages of central bank money, some system operators – such as CLS – have changed over to a "prefunding" approach, in which central bank money has to be provided by the participants in advance on a central bank account held for the system operator. A further step would be if the central banks were to outsource their account management to external system operators (see page 54). In the long term, such a development would result in a withdrawal from operational busi-

ness and may endanger the banking competence of the central bank. Furthermore, the strategic dependency on the contractor would expose the central bank to considerable economic and reputational risks. In fact, it would be questionable whether the central bank – supported only by contractual agreements – could continue to control and shape the development of the highly sensitive area of central bank money provision to a sufficient extent. Moreover, under the principle of competitive neutrality, it would have to prevent individual systems from obtaining privileges with regard to the use of central bank money and gaining competitive advantages over other private providers. Outsourcing to several, rival systems would be the answer. However, the resultant splitting of liquidity would probably lead to an inefficient overall solution in conflict with the current approach of managing liquidity in the central bank system and would most likely make liquidity management more difficult for central banks and other banks.

Public good factor for central bank services

When the central bank operates its own system, the fundamental question arises of whether pricing decisions must always meet the principle of full cost coverage. Economic reasons would initially indicate that a cost-oriented price policy will result in a provision of services in line with market conditions and prevent a misallocation of resources. On the other hand, there is good reason to believe that with their services central banks react to market imperfections or generate external effects which are not covered by market prices and may legitimate accountability for the operational activities of central banks. Individual examples might include a particularly high quality of business continuity provisions or a high level of security for settlements – especially owing to immediate finality in central bank money – which have a positive impact on the stability of the entire financial market. The resultant scope of flexibility in the pricing policy can, however, be evaluated only on a case-by-case basis and with restraint. Furthermore, such leeway is reduced when the central bank imposes obligations on other system operators as part of payment systems oversight, leading to a quality comparable to that of their own services.

Outlook

Successful individual payment systems are based on market needs, change with the markets and will in future take on the shape which is best suited to dealing with the forthcoming challenges. The Bundesbank will observe the changes in individual payment systems in accordance with its mandate under section 3 of the Bundesbank Act and will continue to contribute to the high level of security and efficiency in its role as partner to the banks, service provider within the Eurosystem and pro-active facilitator.