Chapter VI

The effects of consolidation on payment and settlement systems

1. Introduction

This chapter consists of three sections. Section 2 reviews the types of consolidation identified in Chapter I and discusses applications to payment systems. Section 3 provides a review of the main causes of and obstacles to consolidation covered in Chapter II in the context of payment systems. Section 4 analyses efficiency, competition, risk and oversight aspects of the consolidation of the financial industry on payment and settlement systems. The chapter ends with some preliminary conclusions concerning those issues that deserve further consideration from a policy perspective.

2. Types of consolidation

Consolidation in a payment and settlement context includes both mergers and acquisitions (M&As) and other developments within the financial industry, such as alliances, joint ventures and the outsourcing of payment processing, that result in a higher degree of concentration of payment and securities settlement activities. In addition, reorganisation measures within individual financial institutions and the consolidation of market infrastructures have significantly influenced the structure and dynamics of the payment and securities settlement industry.

Institutional consolidation

Merger decisions are generally not driven by payment or securities settlement considerations. Nevertheless, M&As often have important implications for payment and securities settlement activities: they are usually followed by internal reorganisation and consolidation of information technology (IT) infrastructures, payment functions and accounting systems. They may also stimulate a rationalisation of the payment and securities settlement policy of the banks concerned.

Specialisation, outsourcing, alliances and joint ventures

Consolidation in the payment and securities settlement industry also occurs through structural and business developments such as alliances, specialisation, joint ventures and outsourcing. At a domestic level, cooperative joint ventures, outsourcing and specialisation have been the predominant forces of concentration. At the international level, fewer correspondent banks (due to industry consolidation) and the emergence of new cross-border infrastructures have been key factors.

At the domestic level, cooperational approaches in the G10 countries have a long tradition, particularly in the savings, cooperative and community banking sectors. Small and medium-sized savings and cooperative banks often outsource payment activities or securities-related back office activities to sector-specific cooperative interbank clearing mechanisms. In Germany, for example, the savings and cooperative banking sectors have established their own giro networks based on internally agreed exchange and settlement procedures. In the United States, credit unions often clear some of their payments through a network of so-called corporate credit

unions and a central corporate credit union. Corporate credit unions are cooperative entities owned by the credit unions and chartered to supply transaction services to the credit unions. Similarly, in the US community banking sector, payment transactions may flow through bankers' banks owned by several community banks.

Another domestic development is the emergence in Europe of transaction banks (sometimes also called "white-label providers") that specialise in the provision of payment or back office services to other banks. These banks are often established as separate legal entities, even when they are sponsored by one large bank. This ensures confidentiality of operations, which is an important condition for being chosen as a service provider by other banks, and leaves open the possibility for other banks to become shareholders. In the United States, specialised banks known as bankers' banks provide a wide array of payment and settlement services to other banks.[305]

Another domestic phenomenon, particularly in the United States, is the outsourcing of payment and securities clearing to a third party, which may be a bank or a non-bank entity. Banks increasingly have recourse to such entities, allowing them to specialise in the "sales function" (covering direct relations with customers, including account holding) while outsourcing the "production function", ie the processing of payments and securities, to third-party service providers. In the United States, for example, the top five non-bank service providers already account for nearly 20% of the outsourcing market. Third-party service providers are confident that the rapid convergence of financial services providers will increase their business even further in the coming years. These companies forecast that traditional financial institutions, such as banks, will increasingly focus on offering existing and new products that are in line with their core competencies rather than expending effort on conquering the more repetitive back office tasks.

At the international level, consolidation is leading to an increasing concentration of correspondent banking[306] and custody services[307] in a smaller number of large market players. Correspondent and global custody institutions are normally selected by other banks according to the range of products they offer, the ease of access to their services (including the issue of how the exchange of payment and securities settlement-related information between the service provider and the customer is handled), the payment and settlement systems in which they participate, their financial standing and their ability to raise liquidity.

The role of traditional correspondent banks is also changing with consolidation. Most international banks have reviewed and reduced the number of nostro accounts they maintain with other banks and correspondent relationships based on reciprocity are largely being replaced by commercially based relationships, joint ventures or alliances. In addition, the emergence of cross-border settlement mechanisms, such as TARGET,[308] the Euro Banking Association's (EBA) Euro 1 system and the impending CLS Bank, are eroding the traditional payment "bridging" function of international correspondents. Networks have also been established for the purpose of making low-value cross-border retail payments in Europe. TIPA, for example, is a network of correspondent banks, mainly from the cooperative banking sector, which hold

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[305] See "Bankers' Banks: A Correspondent Alternative for Community Banks", Camden R Fine, Thesis, Stonier Graduate School of Banking, American Bankers Association, June 1992.

[306] The term "correspondent banking" describes an arrangement where one bank provides payment and other services to another bank. 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 boundaries.

[307] Custody services include the safekeeping and administration of securities and financial instruments on behalf of others.

[308] The information on TARGET can be found in the annex to this chapter.

accounts for each other and which have thereby established a multilateral correspondent arrangement. Via the receiving correspondents, the respective local payment systems can be accessed. S-Interpay is a network founded in 1994 by the German savings banks to facilitate cross-border retail payments. The system consists of a network of correspondent banks, most of them also from the savings bank sector, in different countries.

Economic and monetary union (EMU), for example, has substantially reduced the number of correspondent relationships needed to operate in Europe and, as a result, has accelerated the trend towards concentration of the correspondent banking business. In Japan some of the largest banks have gained most of the yen payment and securities settlement business originating from small or medium-sized banks located in the United States and Europe. Similarly, several large US banks indicated that they have consolidated their correspondent and custody banks to the extent that they use only one or two local correspondents in each major currency. With regard to global custody, the assets held in custody by the 20 largest global custodians increased by more than 80% between 1996 and 1999.[309]

Internal consolidation

Internal consolidation describes a reorganisation process within an individual financial institution (or within a banking group) that leads to the concentration of payment and securities-related processing and back office activities within a few processing centres. This evolution is in contrast with the traditional organisation of major international banks, where payment and securities settlement business is distributed among their branches and subsidiaries abroad, each of them having responsibility for settlements in the local currencies. Large international banks now tend to concentrate most of their worldwide payment activities in one (or a few) processing centre(s). The future establishment of the Continuous Linked Settlement (CLS) mechanism, which is intended to limit foreign exchange settlement risks, is likely to support this trend.

In the case of banking groups consisting of legally independent banks controlled by a holding company, consolidation is sometimes achieved by centralising a number of payment-related activities (eg direct access to payment systems, liquidity management for the group as a whole, correspondent banking and custody services) at the holding company or at one of the banks of the group. Centralisation of access to large-value payment systems and liquidity management may provide significant cost savings as well as greater efficiency in liquidity management.

Furthermore, individual systems, including those that are run by central banks, may be subject to some form of internal consolidation. For example, in the United States, the IT platform supporting the Fedwire funds and securities transfer systems has been consolidated from 12 district data processing centres and four backup locations into three sites. In the euro area, the Eurosystem has started discussions on how to overcome the difficulties related to the fragmented nature of the present TARGET system.

Consolidation of market infrastructures

Consolidation concerns not only financial institutions, but also the market infrastructures for making payments and settling securities transactions. Market participants are increasingly seeking to produce interbank payment and securities settlement services in a cost-minimising approach, leaving the creation of value added payment services to the commercial relationship between a bank and its customer. In this respect, a global trend towards consolidation is observable both at the horizontal level (eg the merger of two securities settlement systems) and at the vertical level (eg in the securities industry, the integration of trading, clearing, settlement and custody services within a single institution).

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[309] *Institutional Investor*, September 1999, volume 24, issue 9, pp 199-200.

Securities settlement in the United States offers a good example of horizontal and vertical consolidation. First, the Depository Trust Company (DTC), the largest securities depository in United States, merged with two regional depositories, the Midwest Securities Trust Company and the Philadelphia Depository Trust Company, resulting in a single central securities depository (CSD); second, in 1999, DTC and the National Securities Clearing Corporation, which compares and nets almost all broker-to-broker corporate and municipal securities trades in the United States, affiliated their organisations under a common holding company, the Depository Trust and Clearing Corporation.

In the European Union (EU) the consolidation of the securities settlement industry has accelerated since the start of Stage Three of EMU. It is taking place through the merging of CSDs that operate securities settlement systems. In January 2000 the owners of Cedelbank, the Luxembourg-based international central securities depository (ICSD), and the owners of Deutsche Börse Clearing, the German CSD, set up a new holding company called Clearstream International, which owns both depository institutions. These have been renamed Clearstream Banking S.A. and Clearstream Banking AG respectively. The legally separate entities will use a common technical infrastructure and intend to create a pan-European clearing house. In March 2000 the boards of Euroclear, the Belgium-based ICSD, and Sicovam, the French CSD, also announced their agreement in principle to merge fully the two organisations. The agreement states that Euroclear will take over Sicovam and that it has an option of taking an ownership interest of up to 20% in Clearnet, the Paris Bourse's subsidiary for clearing and netting. In turn, Sicovam will receive a certain share in Euroclear.

Consolidation, in the form of international joint ventures, is also occurring among securities clearing organisations. An example is the establishment of the European Securities Clearing Corporation (ESCC). The ESCC is a pan-European clearing house, which was set up by Euroclear and the US Government Securities Clearing Corporation (GSCC) to provide trade comparison and netting services for European government debt securities. The London Clearing House (LCH) has joined this partnership.

3. Causes of and obstacles to consolidation

Causes of consolidation

Although consolidation in the financial sector is driven by a variety of factors (see Chapter II), two have been the main driving forces behind the consolidation of payment and securities processing: cost reduction and leveraging specialised business opportunities. For banks, it is becoming increasingly important that the provision of payment and securities settlement services is produced at minimal cost due to increased competition as a result of EMU and nationwide banking in the United States. In addition, increased concentration in processing payments will drive the demand for rationalisation of market infrastructures.

A move towards consolidation of payment and settlement processes, for example, is one natural consequence of the European integration process stemming from the introduction of the euro. This integration process will allow banks, whether based in Europe or not, to take full advantage of economies of scale and scope inherent in the payment and settlement business. Major players in the financial markets, especially, tend to ask for a higher degree of harmonisation of the different domestic systems or even to require a consolidation of infrastructures across borders in order to save costs. For example, in the securities industry, the introduction of the euro and the elimination of currency risk permit investors to adjust their portfolios by targeting new financial instruments and markets. The increasing importance of cross-border trades, in turn, has put pressure on service providers to integrate their infrastructures in order to provide cost-efficient mechanisms for the transfer of cash and of securities. An outgrowth of these pressures has been the creation of the European Central Securities Depository Association (ECSDA), which is looking at methods of integrating or linking European central securities depositories. As banks

globalise, their need for more efficient payment and settlement processes has also manifested itself in the growing demand for direct remote access[310] to payment and settlement systems and a global collateral pool.[311]

On the business opportunity side, the interviews indicate that, as cross-border mergers occur in order to diversify business portfolios, international banks also want the ability to offer a wide range of payment and settlement services to sophisticated customers. Such services are complementary, and in some cases essential, in order to seize business opportunities in such areas as asset management, global custody and corporate cash management services.

Closely related to technology investment is the requirement for real-time payment processing. Furthermore, providers of payment and securities settlement services have to accommodate requests for more sophisticated services, such as intraday (or even real-time) delivery versus payment (DVP) settlement (ie the simultaneous settlement of the securities leg and the cash leg of a securities market transaction), cash management services and related information services. Other requirements stem from the goal to increase processing efficiency through systems integration and straight-through processing. The Global Straight Through Processing Association (GSTPA), for example, is an initiative set up by financial intermediaries composed of broker/dealers, global custodians and investment managers involved in the processing of cross-border securities trades. The primary objective of the GSTPA is to reduce the risks and costs of cross-border trade activities by accelerating the flow of cross-border trade information and reducing the number of failed trades.

On the other hand, technological progress has also reduced processing costs and made many options more affordable to all market participants, irrespective of size. Several interviewees expect certain non-bank institutions to provide payment-related services via the internet in the coming years and thus to become direct competitors of banks.

Obstacles to consolidation

In the field of cross-border consolidation, the political and regulatory environment has the potential to increase the difficulties facing mergers and internal consolidation of payment and securities settlement processes. Certain tax regulations, different legal frameworks (eg with regard to employment law, bookkeeping rules and the nature of the legal title to securities in different countries, such as bearer versus registration) and differences in reporting requirements have been the main impediments to consolidation. A higher degree of harmonisation in these fields – if desired – would probably not be easy to achieve. Moreover, restrictions concerning direct remote access to payment and settlement systems or to intraday and overnight central bank credit (including the issue of locally accepted collateral) often make it necessary for banks to continue to rely on foreign subsidiaries or branches or correspondents in order to have access to the respective systems.

The existence of non-harmonised internal IT platforms may prevent banks from consolidating their payment and back office activities at fewer locations, whether domestically or cross-border. The general lack of standardisation (with regard to message formats, etc) between payment and settlement systems in different countries causes similar problems. Banks, however, might now be expected to make greater efforts to streamline their internal systems and

[310] Direct remote access to an interbank funds transfer system (IFTS) is the ability of a credit institution established in one country ("home country") to become a direct participant in an established IFTS in another country ("host country") and, for that purpose, to have a settlement account in its own name with the central bank (or, more generally, with the settlement agent) in the host country without necessarily having established a legal physical presence in the host country.

[311] A global collateral pool would contain collateral denominated in several currencies, which would be accepted by several central banks for the collateralisation of intraday and/or overnight credit provided to their eligible counterparties.

procedures given the end of Year 2000 transition efforts, which hampered the consolidation process.

On the other hand, advances in information and network technology have also reduced the obstacles to consolidation in the payment and securities settlement industry. Declining technology costs and increasing technological capabilities have allowed for the emergence of new payment and settlement processing arrangements. For example, centralised processing and remote access through telecommunications networks have reduced geographical barriers. As a result, for those banks that have or can attract a critical mass of transactions, the provision of payment and securities services can leverage their business opportunities across other banking services (eg credit provision, custody services, information services, cash management services, etc). At the international level, specialised correspondent and custodian banks acting on a global basis may seek to provide payment and settlement services. For those institutions without a critical mass of transactions, technology has also enabled them to outsource their payment and settlement activities to other processors that can capture economies of scale. One of the main advantages for the outsourcing bank is that it shifts the investment costs (as well as the operational risk) to the service provider and converts fixed costs to variable costs. In this respect, consolidation is a rational outcome made possible by declining technology costs and increasing technological capabilities.

4. The effects of consolidation

This section analyses the efficiency, competition, risk and oversight aspects of the consolidation of payment and settlement systems. It concentrates on the major issues related to consolidation and does not attempt to describe all possible implications of all the different types of consolidation.

Effects on efficiency

Consolidation has an impact on the efficiency of payment and securities settlement since it affects the way in which these activities are conducted and thus the resources that are used for the provision of the respective services. A first effect is related to the fact that consolidation tends to lead to a greater concentration of payment and settlement flows among fewer parties within the financial sector. For example, in the United States the top five originators of automated clearing house (ACH) transactions accounted for 49% of total ACH transactions in 1998, compared with only 25% in 1989. At the international level, regional or global banks that specialise in correspondent banking are emerging, while banks of a smaller size are tending to abandon this activity, for which the profit margins are shrinking. Evidence from US commercial banks suggests that concentrations of correspondent deposits have increased over the last five years among both the 10 largest banks and the next 90 largest banks by asset size. By contrast, the share of correspondent deposits at other US banks declined sharply from around 38% in 1995 to some 16% in 1999.

As a result of such concentration, a greater number of transactions are internalised within fewer institutions. Interbank transactions become intrabank transactions which do not involve external exchanges of payment messages via an interbank funds transfer system (IFTS) and hence tend to be cheaper to process.[312] The degree of payment internalisation, however, is dependent upon factors such as the type of businesses in which each entity participated prior to the consolidation, the extent to which the merged institutions consolidate their internal payment processing, and the existing concentration within the market. In Switzerland, for example, two

[312] A comprehensive description of, inter alia, the effects of consolidation on payment system efficiency is provided in the text by Berger, Demsetz and Strahan (1999).

large banks, prior to their merger, had similar types of businesses and nearly the same daily turnover in the national real-time gross settlement (RTGS) system. After the merger and the consolidation of the two RTGS accounts, the turnover of the new institution was roughly the same size as that of one of the pre-merger banks. The total volume and value of payments processed in the RTGS system decreased by around 25%. By contrast, owing to the large number of depository institutions in the United States, the two largest mergers in the fourth quarter of 1999 reduced the overall average value of daily Fedwire flows by less than 0.4%.

Large banks that have specialised in payment processing now increasingly compete directly with interbank systems. Large banks have two main advantages over their smaller competitors with regard to efficiency in payment and securities settlement. First, they typically have the financial strength to invest in new, sometimes costly, technologies that may increase efficiency and reduce risk in payment and securities settlement. Second, their high market share in the payment business enables them to decrease unit costs by capturing economies of scale. Lower unit costs may attract additional volume and increase profits. In the case of specialisation and outsourcing, the market power of the service provider and the contestability of the outsourcing market largely determine whether such efficiencies result in lower prices for downstream users or increased profits for service providers.

Similarly to consolidation in the form of specialisation and outsourcing, internal consolidation may yield scale efficiencies. The cost savings that financial institutions can realise through internal consolidation may sometimes be so great that internal consolidation even becomes an alternative to outsourcing. The cost savings through internal reorganisation also apply to payment and settlement systems: for instance, when the Federal Reserve consolidated the IT platforms that supported Fedwire operations, it was able to eliminate redundant resources and reduce operating costs. These efficiencies permitted dramatic Fedwire fee reductions over a three-year period (a 50% reduction for funds transfers, and a 25% reduction for securities transfers). A recent study found substantial long-run benefits in terms of economies of scale and an improvement in the cost efficiency of Fedwire as a result of consolidation, although there were significant transition costs.[313] Consequences of consolidation for the efficiency of a payment system can also be found in a study[314] of the Federal Reserve's costs of processing cheques, ACH transfers and wire transfers. Both electronic services, ACH and Fedwire, were found to have significant economies of scale. The electronic services have also experienced rapid technological change over the last five years. This finding is consistent with the rapid decline in the prices of computer and communications equipment. Cheque processing, on the other hand, has shown little measurable progress over time. This may, in part, have been due to the fact that easier-to-process items such as payroll cheques may have tended to migrate to ACH. The results of both studies may carry over to consolidation of private sector processors.

The concentration of payment and settlement flows within fewer institutions might also lead to increased efficiency because a reduction in the number of banks can facilitate agreements on technical standards and market conventions. In fact, one study found that countries with more consolidated banking systems have greater use of electronic payments and attributed this to the greater ease experienced in agreeing on common standards, technology and the use of centralised account information.[315] However, there are also examples of countries with a less consolidated banking industry where interbank cooperation in the field of payment systems (including standardisation issues) works well owing to the fact that banking associations – or similar common entities – have been given a mandate by their member banks to act on their behalf in this special area. Furthermore, in cases where a few large institutions dominate the

[313] Hancock, Humphrey and Wilcox (1999).

[314] Bauer and Ferrier (1996).

[315] Humphrey, Pulley and Vesala (1996).

market, each with a legacy system geared to a somewhat different standard, ultimate agreement on common standards and conventions might not be quickly attained.

Finally, financial sector consolidation leads to the emergence of large market players that often have very demanding business needs with regard to the functionality of interbank payment and settlement systems. This is the case at the domestic level, and even more so at the international level. Global players normally participate in several systems and would thus prefer a higher degree of cross-system standardisation. The demand for standardisation includes technical aspects, such as message formats, as well as support for global cash management, DVP procedures and professional information systems. Thus, under the pressure from global market players, the system operators need to enhance market infrastructures continuously. An example of this phenomenon is the efforts of the Federal Reserve, CHIPS and SWIFT over the years to maintain compatible funds transfer message formats (ie an ability to map fields between formats) in order to facilitate straight through processing of cross-system domestic and cross-border payments. With regard to TARGET, in particular large banks operating in several EU countries request a higher degree of harmonisation of the service provided by the different RTGS systems participating in TARGET. The requests from these banks range from the harmonisation of message formats to the provision of a uniform service throughout TARGET. Another example is the work undertaken by ECSDA to standardise the procedures and messages for securities settlement.

Effects on competition

As described in the previous section, the consolidation processes in the financial industry have the potential to increase the efficiency of payment and settlement activities. In many cases, these benefits come from a reduction in the number of market participants. There might, however, be a limit to concentration beyond which the reduction in the number of institutions involved in payment and settlement activities results in reduced competition. This may in turn have negative effects, such as increased prices for settlement services and lower incentives for innovation.

Consolidation also concerns the number of institutions with access to interbank infrastructures (interbank funds transfer systems, securities settlement systems, etc) and the volume of traffic in the systems. Should the volumes processed via traditional IFTSs (or the number of participants) decrease substantially, processing fees might have to be increased in order to ensure cost recovery. As a result, smaller participants may face higher fees or be forced to become indirect participants in the system via the large participants, running higher credit and liquidity risks than is currently the case.

The overall effects of consolidation on competition are likely to vary according to the type of consolidation being considered (eg consolidation of financial institutions or market infrastructures), the definition of the market (ie local, national or global) as well as its contestability, the extent of existing market concentration, and the legal and policy framework governing competition.

With regard to the definition of the relevant market, it would, for example, be inappropriate for the evaluation of the competitive situation in global correspondent banking to assess the market power of a global player which is active in that field against one of the smaller, domestically oriented institutions in its home market. Depending on how the relevant market has been defined, the number of banks that are active in that market or their competitive strengths might differ considerably. It is also interesting to note that, as recent developments in the custody business have shown, two institutions can be both partners in some countries and competitors in others.

As mentioned above, whether consolidation leads to a decrease in competition depends largely on the contestability of the market. If the market is easily accessible to new entrants and there are no sunk costs from entry, the incumbent will not be able to reap excessive profits if it wants to remain in the market. Some of the entry barriers to a market, or barriers to continuing participation by smaller participants, may include the criteria for access to payment and

settlement systems, the fee structures of interbank systems, high fixed costs, switching costs, compliance costs and critical mass of participants and transaction volume to capture economies of scale. These considerations may reduce the contestability of the payment processing market. One response to fears about excessive market concentration has been reasonably open and objective criteria for direct access to interbank facilities.

Most of the banks that were interviewed expect that, despite consolidation, competition in the provision of payment and settlement services will increase in the coming years. One of the reasons is that an increasing number of banks and non-banks are establishing transaction banks intended to act as new third-party service providers. In addition, the possibilities offered by the internet and other technological advances will lower the cost barriers to entering the processing business, and will probably increasingly foster disintermediation of the traditional banking activities, leading to a more pronounced distinction between "sales banks" and "production banks". In general, market participants expect competition to be more intense in the fields of service level and innovation than in the field of pricing policy. Non-price features are, however, often difficult to compare across organisations, so it is difficult to assess the degree of competition in a specific market.

Despite these market expectations, policymakers should be aware that competition is a dynamic process. Competition effects observed over the short term may not be indicative of competition over the longer term. In particular, an increase in competition as a result of consolidation may exist only for an interim period. The picture may change once the market situation has become more stable and the remaining institutions exercise their market power. In short, policymakers should always make sure that a market is contestable.

In this framework, consolidation among payment and settlement infrastructures may represent a special, albeit complex, case. Consolidation among infrastructure systems seems to be driven largely by economies of scale, network effects, and consolidation in the banking industry. For example, banking consolidation increases the likelihood of common membership between two systems. To the extent that two systems have common membership, those common members may seek to achieve cost savings by consolidating systems. These cost savings would arise from elimination of redundant costs and economies of scale. In addition, consolidation would probably expand the network of participants served by the system and provide a larger financing base for investments in new products and technologies. Three policy views of system consolidation exist in the literature – a competing network model, a public utility model, and a model for promoting intra-network competition.[316] The competing network model is premised on the assumption of sufficient transaction volume to sustain multiple networks in a region and that banks have a choice as to which network they can join. Under these assumptions, interbank payment networks would compete on both a price and non-price basis, thus motivating efficiency and innovation. The public utility model sees interbank payment systems as essential facilities that should have open access in order to provide a level playing field for the provision of downstream payment services by the participating banks. In the United States, the public utility model generally exists at the wholesale level for the clearance and settlement of securities transactions. Central securities depositories and clearing organisations, for example, are highly regulated by federal authorities. In a public utility model, efficiency and innovation is achieved through greater economies of scale and network effects, and greater investment capacity resulting from network consolidation. The intra-system competition model also assumes open access and equitable governance that allows all participants a common infrastructure on which to base downstream services and products. For example, in ATM networks, consolidation may enhance competition for retail deposits by allowing small and large banks equal access to a large number of ATM locations.

[316] See Robert Anderson and Brian Rivard: "The Competition Policy Treatment of Shared EFT Networks", and David Balto and James McAndrews: "Joint Venture Payment Networks and Public Policy", Proceedings of the Bank Structure and Competition Conference, Federal Reserve Bank of Chicago.

The competitive effects of system consolidation, however, largely depend on such factors as the governance structure of the surviving system, access criteria, market demand for downstream services, and economies of scale levels. For example, if the governance structure acts to restrict access, limit the introduction of innovative services by the system, or implement anticompetitive pricing schemes, then overall competition may be adversely affected. Determining the competitive effects of system consolidation (ie the social welfare effects) is a complex task requiring the evaluation of highly uncertain costs and benefits.[317]

The multidimensional effects of consolidation on competition are not limited to retail payments, but also apply to wholesale payments and securities settlement. However, in the latter field, system consolidation seems generally to be regarded as having positive competitive effects. In the current restructuring process of the respective European systems, which is, however, a very specific case owing to the introduction of the euro only one and a half years ago, most large banks are in favour of a higher degree of consolidation. In certain fields, such as securities settlement and the settlement of foreign exchange transactions, several interviewees even expressed their preference for monopolies. With regard to securities settlement systems, some took the view that it could be useful to separate the business into areas that could be monopolies (eg registration of ownership) and areas where competition might be favourable (eg transfer of ownership). Others were, however, of the opinion that competing utilities would be preferable, since advances in technology increasingly allow the different systems to connect to each other. This connection was seen as an opportunity to combine the advantages of a more integrated general infrastructure with those of competition between different systems.

The overall market infrastructure should always be considered from the standpoint of risk, competitiveness and cost efficiency. The ownership structure and the governance of a specific system also play an important role in this respect. In some systems, control is vested in the largest users. These large users may not be sympathetic to the needs of smaller users. Other systems may operate on a shared basis or a more representative governance basis. Whether a system is organised on a profit or non-profit basis may also influence competition effects.

Effects on financial, operational and systemic risk

Consolidation in the financial sector may affect the nature and the size of risks associated with payment and securities settlement activities in four areas – transparency, scope, concentration and incentives. These effects may necessitate changes in risk management within individual financial institutions and payment and settlement systems, as well as changes in oversight and supervisory practices.

Settlement risks, for example, may become less transparent as risks shift from rule-based interbank systems with relatively open disclosure to large private sector payment service providers with more discretionary credit management practices and less transparency. Critical operational "choke points" may shift from well recognised and understood interbank systems to private sector firms whose payment and settlement roles may not be recognised fully by market participants or authorities. Risks must be identified and monitored as a first step in risk management. To the degree that consolidation makes settlement risks less transparent to counterparties and the markets by shifting transactions to private systems, risk management may be weakened.

On the more positive side, consolidation also has the potential to improve the scope, integration and coverage of an institution's settlement risk management across settlement transactions such

[317] For opposing views on the effects of ATM network consolidation in the United States, see Elizabeth S Laderman: "The Public Policy Implications of State Laws Pertaining to Automated Teller Machines", *Federal Reserve Bank of San Francisco Economic Review* (Winter 1990), and Robin A Prager: "ATM network mergers and the creation of market power", *The Antitrust Bulletin* (Summer 1999).

as foreign exchange, domestic large-value payments and securities. Some banks, for example, have or intend to implement a single global operations, treasury or risk management centre working on a 24-hour basis, especially to meet the requirements stemming from the use of the CLS system. Some large international banks, such as Chase, Bankers Trust and Deutsche Bank, already have regional or global centres. Consolidations among institutions may also reduce the number of counterparties a large bank must assess for settlement risk purposes, but may also complicate assessment due to the increased complexity of larger, merged institutions.

Chapter III discusses the possibility that consolidation may create firms that may be too large to fail, liquidate, or discipline effectively. One important attribute of such large, complex firms is their extensive participation in large-value payment and securities settlement systems. Consolidation of payment and settlement activity within such firms will also consolidate settlement risks (credit and liquidity risks) and operational risk. In particular, those large, complex firms that specialise in trading, settlement, correspondent banking or custody activities are likely to be the most intertwined with the global payment and settlement infrastructure and become the focal points for much of the settlement activity. The key question, therefore, is: has consolidation increased the risk that the failure or operational disruption of a large, complex firm would be disorderly to the payment or securities settlement systems? Consolidation of payment flows among a few major processors may lead to a significant shift of credit risk from interbank settlement systems that are relatively transparent public utilities to private firms that are relatively more opaque. In particular, financial firms may be extending to or receiving from a large private sector payment processing firm a significant amount of intraday and overnight credit. As a consequence, the failure or disruption of a large payment provider in terms of credit risk could be significant.[318] Furthermore, by shifting credit risk from interbank settlement mechanisms to private firms, the financial markets may forgo some of the risk management benefits of interbank settlement mechanisms, such as settlement guarantees, backup liquidity facilities and settlement failure resolution procedures that help to mitigate the effects of credit risks and buffer systemic shocks.[319] In order to properly manage this shift in settlement risk, bank and non-bank service providers need to have well developed securities settlement and payment risk control mechanisms in place, including adequate liquidity, monitoring of intraday exposures, and counterparty/customer credit and liquidity risk assessments.

With regard to the effects of consolidation on liquidity risk, it is not clear whether positive or negative effects prevail. For example, as payment flows become more concentrated among fewer participants, the likelihood of offsetting incoming and outgoing payments for any particular participant increases. Therefore, there are indications that concentration may facilitate banks' intraday liquidity management and reduce intraday liquidity tensions in a given payment system.

Nevertheless, consolidation may also negatively affect the general liquidity situation in the interbank market. Should the local money market, for instance, be dominated by one or two banks, the possibility of disrupting banks' liquidity management may increase (and, in fact, the dominant participant might also have difficulty investing a large amount of excess reserves in the local money market), as experience in some countries such as Switzerland has shown. For example, if such a major market player fails or, owing to a malfunctioning of its internal IT

[318] In the global custody business, the risk situation might be somewhat different, because securities owned by customers are typically segregated from the custodians' own assets. In this case, the customer may be better protected in the event of the failure of the custodian than in the case of deposit balances with a settlement agent.

[319] The issue of risks within payment and settlement systems has been extensively studied by central banks, especially with regard to RTGS systems, hybrid and net settlement systems, DVP securities settlement systems and foreign exchange settlements. Several central bank reports have outlined procedures for reducing or managing risks in these systems (eg Lamfalussy standards and the Core Principles for Systemically Important Payment Systems). See the website of the Bank for International Settlements for a listing of the relevant reports (www.bis.org).

systems, is no longer able to process payment orders, this may give rise to serious repercussions not only for the liquidity situation of individual market participants which do not receive expected incoming funds, but also for the money, capital and foreign exchange markets in general.

A particular consolidation issue at the international level is the emergence of global correspondent banks that participate directly in multiple foreign payment systems and process high payment volumes in the respective currencies, but which have only limited liquidity resources (eg collateral) in these currencies. Liquidity problems may arise, especially when full collateralisation of central bank credit is required. In the past, these banks usually relied on locally based correspondents that had ample home country assets to pledge for liquidity purposes. Some institutions consider the establishment of a multi-country common collateral pool to be a possible solution to this problem. Such a global collateral pool (see footnote 5) may reduce liquidity cost, since the same collateral could be used for central bank credit in several currencies. In the context of CLS, where banks will have to issue payments in several currencies simultaneously, a global collateral pool might facilitate their operations considerably. Establishing such a common collateral pool, however, would raise important monetary policy, legal and technical issues which would need to be resolved. Another alternative would be for individual central banks (or other liquidity providers) to accept a broader range of collateral. In particular, instruments denominated in foreign currencies might be accepted, subject to an appropriate haircut to cover currency risk. This is, in fact, the approach being followed in the development of the US dollar clearing system in Hong Kong, where the settlement institution proposes to accept certain Hong Kong dollar instruments as collateral for US dollar credit.

Consolidation also affects operational risk. In the short term, banks indicated that operational risk tends to increase after a merger of two financial institutions, until the IT platforms of the two institutions can be integrated.[320] In the longer term, to avoid the liquidity problems linked to a malfunctioning in the internal IT systems of a major player (see above), banks should have robust backup systems and contingency arrangements that are reviewed and enhanced on an ongoing basis. To the extent that consolidation results in the emergence of certain key operational "choke points" in the payment system, public authorities may wish to increase their supervision and monitoring of financial institutions' backup systems and contingency arrangements with an emphasis on the continuity of payment operations.

Finally, consolidation may also affect systemic risk. The stability of the financial system can be endangered when the failure of a financial institution leads to considerable adverse effects on one or several other financial institutions.[321] Payment and securities settlement systems determine to an important extent the exposures among and linkages between financial institutions, because they provide the technical infrastructure through which market transactions are settled. Therefore, they are one of the channels through which contagion effects can be transferred through the financial system. One basic premise is that the greater the degree of consolidation, the more concentrated payment flows will be among fewer, larger institutions and the greater the adverse effects on other financial institutions from the failure to settle of another financial institution.[322] It is not clear, however, what net effect consolidation will have on the settlement risk profile of individual institutions. As mentioned previously, consolidation

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[320] In this report, the term "operational risk" mainly refers to major failures of information technology systems. In a broader sense, however, operational risk also includes breakdowns in internal controls and corporate governance. Such breakdowns - which might also be more likely to occur in the restructuring phase after a merger - can lead to financial losses through error, fraud or failure to perform in a timely manner. A detailed analysis of this issue is provided in the Report on Operational Risk Management of the Basel Committee on Banking Supervision (1998).

[321] This is a narrow definition of systemic events or systemic risk. For a comprehensive analysis of the concept of systemic risk, see de Bandt and Hartmann (1998).

[322] See also Berger, Demsetz and Strahan (1999).

may allow institutions to improve their risk management practices by getting a more comprehensive picture of their settlement exposures across multiple markets and systems. Larger institutions would also have the resources to invest in more sophisticated risk management systems. On the other hand, consolidation may shift payment flows and their attendant risks from relatively transparent, rule-based interbank systems to more opaque, discretionary private institutions.

Second, it should also be considered that a smaller number of market players might facilitate the monitoring of risks by supervisors and counterparties. On the other hand, the structure of a merged institution may be so complex, at least in the initial period after the merger, that it raises additional concerns and makes supervision more difficult (this is especially true for cross-border mergers). In any case, it is clear that even if consolidation does not necessarily increase the probability that individual institutions will fail, it makes the consequences of the failure more likely to have wide-ranging systemic effects.

Third, the rapid changes in the financial markets and organisations as a result of consolidation coupled with technological changes and the entry of non-banks into payment and settlement activities might also have systemic risk implications. Supervision of the credit, liquidity and operational risks posed by non-bank service providers of payment services is still an evolving issue. Organisational change, unless managed proactively, can pose significant risks. Technology can be a powerful tool or a significant risk, depending on the level of understanding of the issues by management.

Fourth, a shift of settlement activity from interbank settlement mechanisms with risk-adverse objectives to private sector firms with a more positive risk appetite, in the aggregate, may increase systemic risk. The incentives for risk management, particularly under adverse market conditions, may shift from the collective protection of the clearing house to the protection of an individual firm. Such a shift in incentives may be destabilising during a market crisis as payment service providers look to the protection of their firm first. Since robust interbank payment systems play a role in buffering credit and liquidity shocks by dampening their transmission to other market participants, the shock absorber role may be minimised or forgone as consolidation progresses. To the extent that most payment flows continue to go through interbank systems, systemic effects depend largely on the design and the robustness of the payment system's risk controls. A payment system can function in a neutral way as a simple transmitter of contagion effects, increase contagion effects or, by contrast, act as a shock absorber, depending on its approach to settlement risk management. Central banks have undertaken several major efforts in the past two decades to strengthen risk management in systems and to reduce and contain systemic risk. For example, they have promoted and operated RTGS systems and insisted on the implementation of risk control measures in net settlement systems. RTGS systems, for instance, can offer a powerful mechanism for limiting systemic risks in the interbank settlement process, because they can effect final settlement of individual funds transfers on a continuous basis during the processing day. With regard to public and private net settlement systems, the Lamfalussy standards (ie minimum standards for the design and operation of netting schemes) define one basis for effective risk control. Systems fulfilling the Lamfalussy standards will be able, at the very least, to withstand the failure of the participant with the largest single net debit position. Due to the risk control measures in such a system (eg limit systems, collateral requirements and loss-sharing agreements), this is independent of the size of an individual participant. For example, after a merger of two participants in the same system, the new institution might have higher limits in the system, but will also have to provide more collateral to cover the higher exposure. It is, however, also true that, in the event of the failure of a participant during the settlement day, counterparties in both an RTGS system and a net settlement system complying with the Lamfalussy standards would not receive expected incoming funds from the failed participant if the failed participant had not submitted the payments to the system prior to its failure.

Finally, consolidation as it affects the size of a participant, its settlement business or the role of interbank payment systems may have implications from a systemic risk perspective.[323]

For example, certain developments at the level of both financial institutions and payment and settlement systems may increase systemic risks by increasing the dependencies between systems. Interdependencies between systems have increased as a result of the emergence of multinational institutions and specialised service providers that have access to several payment and securities settlement systems in different countries. Furthermore, consolidation has caused an increasing interdependence between different systems as evidenced by the development of systems such as CLS or by the implementation of DVP procedures. On the one hand, DVP mechanisms, for example, eliminate principal risk in securities settlement. On the other hand, by connecting payment and securities settlement systems, they may accelerate the transmission of settlement problems from one system to another.[324] Likewise, CLS acts as a bridge mechanism between multiple payment systems, potentially increasing the operational and liquidity interdependencies between such payment systems. These examples indicate the growing importance of payment and settlement systems in the potential transmission of contagion effects caused by consolidation among participants and systems. Finally, market participants may assume that global correspondent and custodian banks are "too big to fail" from the perspective of settlement system and financial system stability. Market participants may also mistakenly believe that settlements on the books of these institutions have the same quality as settlements on the books of a central bank. Consequently, a moral hazard problem might occur not only with regard to the global clearing and custodian banks themselves, but also with regard to other market participants.

In conclusion, financial consolidation may shift credit and liquidity settlement risks from relatively transparent, risk-adverse interbank utilities to more opaque, risk-taking private firms. At the same time, operational "choke points" in the payment system may shift from well recognised and understood systems to private firms whose role in the payment system may not be fully recognised by market participants or authorities. Consolidation may shift risk management incentives from a risk-avoidance, collective protection to a risk-taking, individual firm protection bias. Such a shift may be destabilising during a market crisis as individual payment processors seek to protect their firm interests first. Finally, consolidation may be increasing the interdependencies and linkages between payment and settlement systems. Taken together, these effects may create additional opportunities for spillover effects or negative externalities to arise.[325] Consolidation's effect on financial, operational and systemic risks in a particular venue, however, depends in part on the initial conditions of the banking system in that venue regarding payment flows, concentrations and merger patterns.

Effects on the oversight role of central banks

Consolidation processes lead to the expansion of very large institutions with a high share of in-house payment and settlement transactions. Many of these institutions provide payment services to other banks or other payment intermediaries by effecting payments between the accounts of these entities in their books. To some extent, these institutions can be considered alternatives for traditional payment and settlement channels. As consolidation progresses, the concentration of payment activity among a few large institutions will challenge the traditional oversight role of

[323] See Chapter III for a working definition of systemic risk.

[324] However, DVP is often achieved via systems where the securities settlement system also settles the cash leg of a transaction through its own processing system. In such a system design, the interdependencies between payment and securities settlement systems are significantly reduced.

[325] Spillover effects, negative externalities and interdependencies are key components of systemic risk as defined in Chapter III.

central banks over the payment system and the bank supervisors' role over individual institutions. Central banks will need to better understand the role played by key institutions in the flow of payments and bank supervisors will need to analyse whether existing supervisory tools are suited to coping with institutions' growing role in the payment and settlement business. New cooperative arrangements between banking supervisors and overseers may be needed to identify and analyse the interactions, dynamics and risk at both the institutional and system levels. With regard to major payment systems, the Core Principles for Systemically Important Payment Systems now provide a key set of evaluative standards for the relevant authorities.[326] Moreover, the increasing importance of cross-border consolidation may require an intensification of cross-border cooperation between payment and settlement systems overseers and banking supervisory authorities and securities supervisory authorities. Examples in this direction include the joint IOSCO/CPSS working group to develop standards for securities settlement systems and the joint IOSCO/CPSS effort to establish a disclosure framework for securities settlement systems.

Finally, the expected increased entrance of non-banks in payment and settlement-related activities might present a further challenge to central banks and bank supervisors. Most of the interviewees did not express a general concern about this fact, although they expect increased competition. However, what the banks clearly have requested is a level playing field between themselves and any kind of new market participant.

5. Conclusions

The current situation of the financial industry in the G10 countries is characterised by an accelerated consolidation process, not only changing the banking structures through M&As, but also affecting the market infrastructures for payment and securities settlement and banks' internal systems and procedures for payment and back office activities. In parallel, the global correspondent banking and the global custody businesses are tending to be concentrated among a smaller number of large market players and, at the domestic level, banks are increasingly starting to outsource payment and settlement activities to bank and non-bank payment service providers.

The emergence of large, specialised service providers is driven primarily by both the benefits of size and, consequently, of the potential to make large investments in the necessary IT infrastructure, and the internationalisation of the interbank and capital markets. The latter factor has been made possible by a general trend towards deregulation and liberalisation of financial markets and is connected with sharply increasing cost-cutting pressure. Global players, in turn, are becoming more demanding vis-à-vis market infrastructures in terms of their business needs for efficiency of payment and securities processing. Consequently, they are often the main drivers of a greater harmonisation and consolidation of systems, both domestically and across borders.

All the types of consolidation analysed in this report affect efficiency, competition, risk and the oversight role of central banks. Many of these effects can be considered to be quite positive and may, for instance, lead to lower prices for payment and securities transactions for banks as well as for customers. M&As may result in stronger financial institutions, which are able to invest in risk-reducing technologies, and internal consolidation may allow banks to manage credit and liquidity risk better. However, there are also possible long-term negative effects with regard to competition, which are difficult to predict today. It cannot be ruled out that a decrease in the number of financial institutions or payment and settlement systems competing in the relevant

[326] See Committee on Payment and Settlement Systems, Consultative Report on *Core Principles for Systemically Important Payment Systems*, Part 2 - Implementing the Core Principles, page 3.

markets may ultimately result in higher prices for settlement services and lower rates of innovation. Moreover, certain changes in the role of financial institutions in the field of payment and securities processing have the potential to affect the nature and the size of risks arising in connection with these activities which, in turn, may require oversight and supervisory authorities to adapt their policies.

The complexity and different effects of the consolidation processes taking place within the payment and settlement industry make it impossible to categorise consolidation either as purely positive or as purely negative from a social welfare viewpoint. Furthermore, consolidation cannot be analysed only from a payment and securities settlement or even central bank perspective. In general, at the present stage, it does not seem to be advisable for public authorities to interfere with the market competition between financial institutions or between payment and settlement systems. In fact, public authorities, as a public policy objective, may wish to remove potential obstacles to the consolidation process when it enables the market to develop initiatives aimed at reducing risks and enhancing efficiency in the field of payment and securities settlement.

However, authorities should carefully monitor the impact of consolidation in the field of payment and settlement businesses from a risk, efficiency and competition viewpoint. Authorities should not refrain from defining safety or access standards when appropriate, especially regarding the potential risks stemming, on the one hand, from very large players participating in payment systems and, on the other hand, from the emergence of consolidated systems. There are some issues related to consolidation of the payment and settlement system that might become key areas of interest for central banks in the coming years and which they – or public authorities in general – might need to examine more closely. First, the providers of payment and securities settlement systems (including central banks as providers of RTGS systems) might face an increasing demand for remote access from large correspondent and custody banks operating on a global basis. Closely related to the issue of remote access are the ideas of a global collateral pool and of an extension of the range of eligible collateral accepted by individual central banks, both of which are aimed at avoiding temporary liquidity tensions within and across payment systems, eg in connection with the operation of CLS.

Second, the increased entrance of non-bank service providers into a market which used to be occupied only by banks, and the development of the internet and e-commerce might increasingly affect central banks in discharging their responsibility to ensure the soundness and the efficiency of the payment system. Although the current developments might be regarded as improving competition, banks expect public authorities to ensure a level playing field in this area in terms of safety and soundness.

Third, the provision of payment and settlement services usually requires significant IT investments. This fosters the emergence of large, specialised service providers that, to some extent, can be considered as alternatives to traditional interbank payment and settlement systems. Consequently, there might be a shift from risks within interbank settlement systems to risks between customer banks and service providers. Banks should be aware of these risks and need to have well developed risk control mechanisms in place. A failure of a large service provider, or even a temporary technical problem in one of its IT systems, might have serious systemic liquidity and credit effects.

Fourth, a closely related issue is the fact that customer banks might perceive global correspondent and custodian banks as “too big to fail”. Consequently, moral hazard problems might occur in the market. This is an additional reason for central banks to insist on effective risk management procedures.

Fifth, the emergence of large bank and non-bank service providers and concentrated payment flows through these providers raises a question concerning the respective roles of overseers and banking supervisors and the suitability of the tools they currently use to fulfil their responsibilities. This issue has both functional and, owing to the increased cross-border consolidation, jurisdictional aspects. The appropriateness of the current cooperative

arrangements between central banks and supervisors – domestically and cross-border – should be carefully analysed to ensure the soundness and the efficiency of the payment and settlement systems and, at the same time, to strive for synergies.

Annex VI.1: TARGET[327]

Before the start of economic and monetary union (EMU), separate RTGS systems existed in the EU countries. Some of them had been operating for several years, others were established only recently in view of the requirements of EMU. With the introduction of the euro, these individual RTGS systems were interconnected to form one single system: TARGET. TARGET is a decentralised system consisting of 15 national RTGS systems, the European Central Bank payment mechanism (EPM) and the Interlinking system, which is a telecommunications network (S.W.I.F.T.) interconnecting these systems. TARGET is needed under EMU in order to achieve – between the national central banks of the euro area – the same easy transferability of central bank money which had previously existed within the individual countries. The integration of the euro money market, made possible by TARGET, is a prerequisite for a single monetary stance in the euro area. Apart from the monetary policy considerations, TARGET also reflects the central banks' willingness, during the 1990s, to develop RTGS systems as a safe way of processing payments, minimising systemic risk and promoting the efficiency of cross-border payments.

The TARGET experience provides several lessons regarding the consolidation of payment infrastructure in the areas of market demands for further infrastructure consolidation, implications for liquidity management, and operational risks arising from interdependencies.

Today, participants consider TARGET to be one system rather than a hotchpotch of 15 different ones and they have requested further harmonisation. In particular larger banks (representing 70 to 80% of payment flows), which typically access TARGET through more than one national RTGS system, are strongly in favour of a more uniform service level. As consolidation in the European banking sector progresses, the pressures for further harmonisation of the TARGET system are likely to increase. The Eurosystem has recently started a discussion on the long-term evolution of TARGET in order to eliminate some existing shortcomings of the present system and to be able to adapt the system to meet future developments in technology and the financial sector in general.

The TARGET experience has also shown that banks needed some time to learn to manage their liquidity efficiently across several interlinked large-value payment systems operating in euros. Market conventions concerning the efficient movement of funds that, prior to TARGET, existed only at the national levels had to be developed for the euro area level. Further developments in liquidity management are expected as banks gain experience in euro markets.

In addition to changes in liquidity management, it became clear that consolidation raised important operational issues. An incident in one component of TARGET or at a major bank, for example, has repercussions across borders, given the interdependencies that exist. For instance, in 1999 there was a system error at one of the very large banks, which resulted in a breakdown in the control system for online applications on the mainframe. As a result, payment orders for foreign exchange and money market transactions, securities settlement and customer payments could not be processed. The backup system of this bank could not be used since it exhibited the same software error. As a consequence, various emergency and manual procedures were used. However, they were not sufficient to cope with the number of payments to be processed and, as a result, the execution of many large-value payment and securities orders had to be postponed until the next business day.

[327] TARGET is the Trans-European Automated Real-time Gross settlement Express Transfer system. It processes over 190,000 payments each day valued at over EUR 1 trillion, of which more than 41,000 payments valued at over EUR 450 billion were cross-border payments.

TARGET represents a specific form of consolidation that originated from the central banks, rather than the markets, in order to facilitate the implementation of the single monetary policy of the Eurosystem. The TARGET experience demonstrates some of the implications from cross-border consolidation of national payment systems such as liquidity effects and operational dependencies. As consolidation of financial services continues, market participants are likely to put increasing pressure on the Eurosystem to further harmonise TARGET. Despite TARGET's central bank origins and objectives, the Eurosystem is being responsive to market needs by continuously seeking input and feedback on TARGET-related issues from the banking and financial community. At the national level this is done through regular TARGET User Group meetings. At the euro area level the Eurosystem has regular discussions with European banking associations and representatives of individual financial institutions.

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