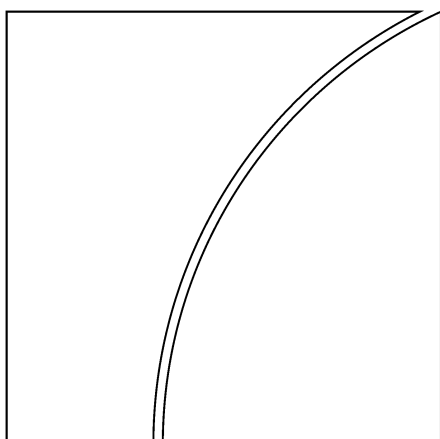


Committee on Payment and Settlement Systems



Policy issues for central banks in retail payments

Report of the Working Group on Retail Payment Systems

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BANK FOR INTERNATIONAL SETTLEMENTS

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Section 1: Executive summary

1.1 This report identifies and explores policy issues for central banks that arise from current trends in retail payments markets in the G10 countries and Australia. In the light of these issues, it considers the possible contribution of central banks towards furthering certain public policy goals in this area. These goals might also be of relevance for other public authorities with an interest in the efficiency and safety of retail payments.

1.2 Retail payment systems and instruments are significant contributors to the broader effectiveness and stability of the financial system, in particular to consumer confidence and to the functioning of commerce. Moreover, efficient and safe use of money as a medium of exchange in retail transactions is an essential function of the currency and a foundation of the trust people have in it. For these reasons, the efficiency and safety of retail payments are of interest to central banks.

1.3 The central banks of the G10 countries and Australia are all involved to some degree with retail payments. However, the manner and intensity of their current involvement differ from one country to another. The roots of each central bank's specific pattern of involvement lie in the different institutional structures and traditions of each country. There are differences in the policy mandates of central banks in this area; other public authorities (eg the supervisors of financial institutions and competition and consumer protection authorities) also have an interest in aspects of the efficiency and safety of retail payments to varying degrees. The respective roles of the central bank and the private sector in the provision of services related to retail payments also vary from country to country.

1.4 Central banks are currently involved with retail payments in three main ways, namely in an operational capacity, as payment system overseers, or as catalysts or facilitators of market and regulatory evolution (**Section 3**). As operators, all the central banks provide settlement services for at least some retail payment systems. Some also provide clearing and other related services. The oversight role provides some central banks with strong tools of engagement, but in this area there is considerable variation in central banks' mandates and powers, as well as in the scope and manner of oversight. While, in some countries, the central bank oversees all retail payment systems and arrangements, in others the scope is limited to systemically important payment systems. As catalysts and facilitators, all the central banks have extensive experience in supporting market outcomes, making use of their contacts with the private sector, their capacity for research and analysis, their cooperative relationships with other relevant public authorities, and their role in public policy debate.

1.5 Retail payments markets have been evolving over the past few decades and are continuing to evolve. Certain trends in the application of new technology or in business strategy in these markets are of interest to central banks in the light of their possible implications for the efficiency and safety of retail payments. They emerge in the following areas (**Section 4**):

- (i) innovations resulting from advances in information technology, which have been or are being introduced by the providers of retail payment services at all market levels
- (ii) developments in the market for retail payment services across national boundaries
- (iii) changes in the structure of retail payments markets, in particular market integration and consolidation as well as countervailing trends
- (iv) new participants in retail payments markets, in particular non-traditional providers (for example, non-banks)

1.6 Many market innovations have the potential to improve various aspects of efficiency in both the domestic markets and across national boundaries. They also entail altered safety requirements. The trends in market structure have complex implications, which are difficult to assess overall. Where they involve consolidation, the exploitation of economies of scale and scope is normally an important driver for the relevant private sector entities. If benefits from such economies of scale and scope and from innovation are to flow through to end users, market competitiveness or contestability is a key consideration, so that it becomes important to examine how accessible these markets are to new participants.

1.7 Discussion of these implications is in most cases open-ended. The complexity of the potential implications and the absence of substantive empirical evidence make it difficult to draw firm and universal conclusions. The central banks of the countries involved in the report share the view that market mechanisms should be the primary engine for achieving and maintaining both efficiency and safety in retail payments. However, in some instances the market may encounter persistent

impediments, so that it is not able in every case to produce appropriately efficient and safe outcomes. The existence of such impediments would give rise to policy issues for the central bank. Undesirable outcomes may result from aspects of the relevant legal and regulatory framework, the structure and performance of the market, the standards and infrastructure used, or the range or terms of provision of central bank services.

1.8 Each central bank should examine developments in its markets from time to time in the light of the policy issues identified, in order to form a view on whether such issues arise for them in practice. Where such issues are judged to arise, relevant public authorities (including central banks) may decide to take action aimed at re-establishing an acceptable balance of the various aspects of efficiency and safety. The consequences for efficiency and/or safety of the relevant market developments need to be analysed and evaluated in relation to the benefits and costs of the possible policy actions.

1.9 The policies of central banks may vary from country to country but they have common themes which are expressed in the following four public policy goals (**Section 5**). Policies relating to the efficiency and safety of retail payments should be designed, where appropriate, to:

- (a) address legal and regulatory impediments to market development and innovation;
- (b) foster competitive market conditions and behaviours;
- (c) support the development of effective standards and infrastructure arrangements;
- (d) provide central bank services in the manner most effective for the particular market.

The first three of these goals may also be of relevance for other public authorities with an interest in efficiency and safety in this field. The fourth goal concerns only central banks, as it relates to their provision of services.

1.10 The actions that central banks and other public authorities might take to further these public policy goals could vary greatly, depending both on conditions in the relevant markets and on the institutional context in each country. The report is concerned only with the possible contribution of central banks. It places particular emphasis on two aspects of the central bank contribution, namely the importance of, in the first place, market monitoring and, secondly, a cooperative and advisory approach by the central bank towards both private and public sectors. Such an approach towards the private sector is consistent with the central bank preference for market solutions in most cases. In cooperating with other relevant public authorities, central banks typically make a key contribution, based on the comprehensive overview of efficiency and safety in retail payments that they derive from their responsibilities for the currency and for financial stability overall.

1.11 The emphasis on market monitoring and on the adoption of a cooperative and advisory approach is reflected in particular minimum actions that the report recommends as appropriate for all central banks. The report also identifies other, more proactive, options beyond the minimum, which may be an appropriate policy response in certain circumstances and may be possible for some central banks.

1.12 The public policy goals and the recommended minimum actions are not intended to imply a uniform approach by central banks towards all retail payment systems and instruments, but to be fully consistent with the judgmental approach that typifies central bank involvement in retail payments. In particular, the recommended minimum actions are consistent with a central bank paying greater attention to those systems and instruments which it judges to have greater significance, because they could give rise to significant welfare losses if, for example, they are seriously disrupted or subject to abusive trade practices. In some cases, central banks may find it appropriate to take actions beyond the minimum. The public policy goals and the range of possible actions are set out in full at the end of this section.

1.13 A central bank's choice of appropriate actions takes place within the framework of the three modes of engagement described in Section 3. The modes of engagement are frequently used in mutually supportive combinations. Thus, a central bank's involvement in a particular issue as catalyst or facilitator of a market solution can sometimes appropriately be backed up by regulatory activity as overseer or by a modification to the services the central bank provides.

1.14 In its engagements on these topics with other public authorities and with the private sector, an individual central bank should make clear its role and major policies in relation to retail payments.

1.15 The differences described in the detail of the nature and intensity of different central banks' current involvement with retail payments would almost certainly be greater still if a wider and more disparate group of countries were examined. Even so, the four public policy goals could be appropriate to such a wider group, although the particular circumstances of a country may be relevant to the approach taken by the central bank in furthering the goals. For instance, the degree of development of a country's retail payments markets may be one of many relevant factors in determining the respective roles of the central bank and the private sector. In particular, the central banks of emerging market economies may need to adopt a more proactive approach, for example in the provision of services, at least in the short term, in order to fulfil their policy responsibilities to promote and maintain efficiency and safety in retail payments. This is consistent with the role of central banks in payment system assessment and reform more generally (eg in the application of the Core Principles for Systemically Important Payment Systems).¹ The close involvement of banks and other providers of payment services in such processes is important but, where the sector is not yet sufficiently well established or lacks the resources to make an effective contribution, the central bank may need to take on more detailed responsibility for implementation. As the economy develops, the role of the central bank needs to be reviewed.

¹ See Chapter 10 of *Core Principles for Systemically Important Payment Systems*, BIS, January 2001.

Legal and regulatory framework

Public Policy Goal A:

Policies relating to the efficiency and safety of retail payments should be designed, where appropriate, **to address legal and regulatory impediments to market development and innovation.**

The central bank should, at a minimum:

- (i) Review the legal and regulatory framework to identify any barriers to improvements in efficiency and/or safety;
- (ii) Cooperate with relevant public and private entities so that the legal and regulatory framework keeps pace with changing circumstances and barriers to improvements in efficiency and/or safety are removed, where appropriate.

The range of possible additional actions could include, depending on the individual central bank's responsibilities, powers and priorities:

- Altering regulations that currently present barriers to improving efficiency and safety, where this is within the central bank's remit and where other public interest arguments do not militate against such action;
- Introducing or proposing new regulations, as the central bank's remit allows, where the legal or regulatory framework is insufficient to support increased efficiency and/or safety;
- Offering expert advice to other responsible authorities, for example in the preparation of relevant legislation.

Market structure and performance

Public Policy Goal B:

Policies relating to the efficiency and safety of retail payments should be designed, where appropriate, **to foster competitive market conditions and behaviours.**

The central bank should, at a minimum:

- (i) Monitor developments in market conditions and behaviours relating to retail payment instruments and services and assess their significance;
- (ii) Cooperate with other public or private entities, as appropriate, to foster competitive market conditions and to address any significant public policy issues arising from market structures and performance.

The range of possible additional actions could include, depending on the individual central bank's responsibilities, powers and priorities:

- Promoting appropriate standards or guidelines for transparency, in cooperation with relevant public and private sector entities;
- Reviewing conditions in the market for cross-border retail payments, with a view to promoting improvements, if such action is warranted;
- Considering and, if appropriate, performing regulatory and/or operational intervention in cases where market forces are judged not to have achieved or not to be likely to achieve an efficient and safe solution.

Standards and infrastructure

Public Policy Goal C:

Policies relating to the efficiency and safety of retail payments should be designed, where appropriate, **to support the development of effective standards and infrastructure arrangements.**

The central bank should, at a minimum:

- (i) Monitor developments in security standards, operating standards and infrastructure arrangements for retail payment systems which the central bank judges to be important for the public interest, and assess their significance;
- ii) Cooperate with relevant public and private sector entities to encourage market improvements in such standards and infrastructure arrangements, where appropriate.

The range of possible additional actions could include, depending on the individual central bank's responsibilities, powers and priorities:

- Participating actively in reviewing and developing appropriate standards and arrangements, in cooperation with relevant public and private sector entities, where the central bank judges its more intensive involvement to be necessary to furthering the goal;
- Considering and, if appropriate, performing regulatory and/or operational intervention in cases where market forces are judged not to have achieved or not to be likely to achieve an efficient and safe solution.

Central bank services

Public Policy Goal D:

Policies relating to the efficiency and safety of retail payments should be designed, where appropriate, **to provide central bank services in the manner most effective for the particular market.**

The central bank should, at a minimum:

- (i) Review and, if appropriate, adapt its provision of settlement services to contribute to efficient and safe outcomes;
- ii) Be transparent in its provision of services.

The range of possible additional actions could include, depending on the individual central bank's responsibilities, powers and priorities:

- Reviewing the relevant non-settlement services it provides and considering their adaptation to changing market conditions;
- Reviewing policies on access to central bank services and on pricing.

Section 2: Introduction and context

2.1 This report is the third to be produced by the Working Group on Retail Payment Systems² on behalf of the Committee on Payment and Settlement Systems. The first, *Retail payments in selected countries: a comparative study*³ (“the 1999 Report”), focused on retail payment instruments and end user markets and discussed both technological and economic aspects. The second report, *Clearing and settlement arrangements for retail payments in selected countries*⁴ (“the 2000 Report”), complemented the first, covering the same countries and focusing on the institutional and infrastructural arrangements for clearing and settlement which underlie the instruments and end user markets. Building on the factual background and the analysis presented in the earlier reports, this report (again covering the same selected countries) identifies and examines policy issues for central banks in retail payments.

2.2 Retail payments can be characterised and contrasted with other types of payments in various ways. In the first place, retail payments are typically made in large numbers by large numbers of transactors and typically relate to purchases of goods and services in both the consumer and business sectors, rather than, for example, to the settlement of transactions between financial institutions. Second, retail payments are made using a much wider range of payment instruments than large-value payments and in more varied contexts, including, for example, payments made in person at a point of sale as well as for remote consumer and commercial transactions. Third, retail payments markets are characterised by extensive use of private sector systems for the transaction process and for clearing.

2.3 The report does not concern itself with any policy issues arising from the use of cash, but its coverage extends to all other means of making retail payments. As the previous two reports have made clear, the means of making retail payments can be considered both at the level of the payment instrument and the channel through which the end user accesses the service (eg paper, electronic data files or internet) and at the level of the institutional and infrastructural arrangements for the transaction process and for clearing and settlement. Policy issues can arise for central banks at all the levels. Such issues normally have no relevance for monetary policy and are also in other ways rather different from the issues that arise in relation to large-value systems.

2.4 At the level of clearing and settlement arrangements, this report concentrates on policy issues relating to systems that specialise in carrying large numbers of low-value payments and so may be regarded as wholly or predominantly retail payment systems. Retail payments are most commonly made through such systems, as described in the previous reports, although in some instances systems in which large-value payments predominate also handle significant numbers of retail payments. The boundary between large-value and retail payment systems is acknowledged to be imprecise and changeable. The characterisation of a “systemically important payment system” in the report *Core Principles for Systemically Important Payment Systems*⁵ highlights this issue. Such systems are defined primarily by their risk characteristics, but the boundary between systems which are systemically important and those which are not is not always clear-cut in practice. Categorisation is a matter of judgment for each central bank in relation to the relevant national market. If, for example, a country has only a single payment system handling payments of all values, that system is typically considered to be systemically important. The aggregate value of payments handled by a system may also be relevant, irrespective of the values of individual payments. This means that in some instances, a “retail payment system” may be judged to be systemically important and therefore should comply with all the Core Principles for Systemically Important Payment Systems (“the Core Principles”), although this is not typically the case.

2.5 The report covers public policy issues that may arise in contexts related to the efficiency and safety of retail payments markets. Not all central banks have responsibilities in all the areas

² Members of the Working Group are listed in Annex C.

³ *Retail payments in selected countries: a comparative study*, BIS, September 1999. The selected countries are the G10 countries and Australia.

⁴ *Clearing and settlement arrangements for retail payments in selected countries*, BIS, September 2000.

⁵ *Core Principles for Systemically Important Payment Systems*, BIS, January 2001.

considered, nor does coverage in all cases exhaust the policy interests of central banks in retail payments. For example, some have responsibilities for some aspects of competition and/or consumer protection. The report touches on the policy interests of other public authorities only in so far as these relate to efficiency and/or safety.

Section 3: Present involvement of central banks with retail payment systems

3.1 Introduction

3.1.1 Section 3 analyses the various ways in which the central banks of the selected countries are currently involved with retail payment systems. It considers the three relevant roles they perform, looking first at their operational role, then at their role in payment system oversight, and finally at their role as catalysts or facilitators. There are considerable variations among the selected countries and the differences would almost certainly be greater still if a wider and more disparate group of countries were examined. The section does not aim to give an exhaustive description for each country, but rather to set out the range of relevant activities the central banks currently perform, with illustrations from particular countries.

3.1.2 The objectives that underlie these roles are also examined. In particular, efficiency and safety in retail payments are highlighted as policy objectives common to all the central banks. It is recognised in all the countries that efficient and safe retail payment systems and instruments are in the public interest, because they contribute towards the broader effectiveness of the financial system, in particular to consumer confidence and to the functioning of commerce. Efficiency and risks in retail payment systems were more fully discussed in Section 4 of the 2000 Report.

3.1.3 The existing patterns of central bank involvement in retail payments form the platform from which they can and do act to further their policy objectives in the area. Because of the considerable institutional variations among central banks, the three roles carry different weight for different central banks as modes of policy engagement and present different opportunities and limitations. In many instances, the roles are not mutually exclusive alternatives, but rather mutually reinforcing methods of furthering policy objectives. Many central banks define and disclose publicly their objectives with regard to retail payments, explaining the nature of each of their relevant roles and major policies in relation to their objectives.

3.1.4 As providers of services, central banks can influence market safety primarily by providing a safe settlement asset. Their influence on efficiency in this role is exerted primarily through the terms on which services are provided, for example access conditions and pricing. As overseers, some central banks have strong tools of engagement to further relevant policy objectives. As catalysts or facilitators, central banks can apply their expertise in policy research, analysis and communication and use their influence to assist and speed efficient and safe market outcomes.

3.1.5 Not all of the tools described are available to all the central banks. All have, however, at least a minimum degree of operational involvement as service providers and all have the capacity to act as catalysts or facilitators. The oversight role shows a high degree of variation from one country to another. Some central banks have no mandate to oversee systems that are not systemically important. Others have an explicit remit to oversee retail payment systems, or at least a mandate that does not preclude such involvement.

3.1.6 The three roles are referred to again in Section 5, where they are considered as possible modes for central bank engagement consistent with the public policy goals put forward in that section.

3.2 Operational role

3.2.1 The central banks of all the selected countries provide settlement services for at least some of the retail payment systems in their respective countries. Some of them also perform other relevant operational functions. Notably, in some cases this includes providing clearing services, but some other related services are also provided. Settlement services, clearing services and some of the other types of services are described in turn below, followed by a brief consideration of the rationale for the particular mix of services (broad and narrow) offered by the individual central banks. Table 1 summarises the extent to which the central bank provides settlement and clearing services in each of the countries.

Settlement of retail payments

3.2.2 All the central banks provide settlement services for some, although not necessarily all, retail payment systems in their respective countries. Systems that do not settle over accounts at the central

bank include some post office giro systems and, in most cases, systems based on credit cards. See Table 1.

3.2.3 No retail payment system in the selected countries currently offers real-time settlement between payment intermediaries for individual retail payments. However, significant numbers of low-value payments are made through real-time gross settlement systems that handle (in value terms) predominantly large-value payments. For example, low-value payments on behalf of bank customers make up a significant proportion of the total payments (by number - not by value) in the Reserve Bank of Australia's RTGS system and in SIC (Switzerland), TARGET (European Union) and Fedwire (United States).

3.2.4 In some retail payment systems, batches of payments are settled on a gross basis, for example in Germany, whereas in others batches (or a single daily batch) are settled on a net basis. In the United States, there are examples of both gross and net settlement. The Automated Clearing House (ACH) services and the cheque services operated by the Federal Reserve settle gross in batches, whereas most retail systems operated by the private sector that use the Federal Reserve's settlement services have chosen to settle net positions. In the Netherlands, the two modes of settlement are combined within a single system; the main retail payment system settles in batches during the day (usually at half-hourly intervals), in part gross, in part net.

Clearing of retail payments

3.2.5 Central banks differ considerably in the extent to which they provide clearing services for retail payments – see Table 1. In many of the countries the central bank does not provide such services. Where it does do so, these clearing services are usually limited to a particular range of payment instruments. Paper instruments are most commonly included in this category and some central banks also operate ACHs, whereas clearing arrangements for payment cards are operated solely by the private sector in almost all the countries.

3.2.6 In some countries where clearing services are provided by the central bank, the central bank owns and operates nationwide interbank clearing and settlement systems alongside other systems and arrangements that are owned and operated by the private sector and that handle similar instruments. In the United States, the Federal Reserve System owns and operates the largest ACH and also performs nationwide cheque clearing operations, processing approximately 80% of all ACH transactions and approximately 35% of cheques. In Germany, the Bundesbank owns and operates a system that provides nationwide clearing of credit transfers, cheques and direct debits, processing about 15% of all retail payments. In some other countries, central bank clearing services are provided for arrangements that are wholly or mainly owned by the private sector. For example, in Belgium, the central bank chairs and operates the Centre for Exchange and Clearing (CEC – the national ACH, which is a not-for-profit organisation owned by the banks) on a contractual basis, using central bank personnel and infrastructure.

3.2.7 There are variations in central bank clearing services. For example, for most retail payment systems in Australia, the central bank's clearing services comprise only administration of the calculation of net settlement obligations.

Other retail payment services

3.2.8 In several countries, the central bank provides retail payment services to certain non-bank customers, usually limited to government or public sector bodies. The topic of government payments, including the central bank role, was covered in detail in Annex C of the 2000 Report.

3.2.9 In France and Italy, the central bank provides services to enhance the safety of certain payment instruments. The Bank of France maintains two national databases relating to cheque payment incidents. One of these, the Fichier Central des Chèques, is available for consultation only by financial institutions. The other, the Fichier National des Chèques Irréguliers, can be consulted publicly. It covers such incidents as stop payment orders on lost or stolen cheques, closed accounts, and details of all accounts held by individuals or legal entities subject to cheque-writing bans imposed by the courts. The Bank of Italy is responsible for managing an electronic database, the Centrale d'Allarme Interbancaria, which is currently being implemented and which contains information on individuals or legal entities subject to cheque-writing bans, on unauthorised, unpaid, lost and stolen cheques, and on irregular (ie revoked, lost and stolen) payment cards.

Rationale for providing operational services

3.2.10 The particular range of services that each central bank provides depends on that central bank's policy objectives and on legal and institutional factors. In some cases, the terms on which the central bank can offer certain services or the categories of institutions to which it can offer them are affected by law or by government policy. Provisions in some countries that affect the categories of institutions to which the central bank can offer settlement accounts are discussed further in Section 4.5.

Rationale for providing (or not providing) clearing and other related services

3.2.11 In countries where the central bank does not provide clearing services for retail payments, for example Canada, Japan, the Netherlands, Sweden, Switzerland and the United Kingdom, the view has been taken that the efficiency and safety objectives are best served if clearing services are developed and provided solely by the private sector. In their capacity as payment system overseers or as catalysts or facilitators, these central banks may take various steps (differing from country to country) to ensure the continuing efficiency and safety of such clearing systems, for example assuring themselves that the systems do not present systemic risk, or ascertaining that the operators have taken reasonable steps to ensure operational reliability. In some instances, other public authorities are also involved in some aspects of these systems' efficiency and safety, for example competition authorities. In the United Kingdom, competition in the provision of such services is receiving heightened scrutiny, as the competition authorities assume a more active role in the area. Responsibility for the systems' operation and development, however, remains with the private sector in all of these countries.

3.2.12 In some other countries, concern about efficiency aspects of purely private sector clearing arrangements has prompted the central bank to provide clearing services for some retail payment instruments. In some instances these compete with private arrangements, while in others they complement them. The structure and views of the banking sector sometimes play an important role. For example, in Germany access to many of the privately owned and operated retail payment clearing arrangements is linked in practice to particular types of banks, such as commercial banks, savings banks or cooperative banks. The salient features of the retail payment clearing system owned and operated by the Bundesbank include its openness to access by banks of all types (so avoiding the need for some banks, particularly smaller banks, to depend on the services provided by competitors) and its traditional nationwide coverage (of particular relevance for cheques and direct debits).

3.2.13 Also for reasons of efficiency, some central banks have provided services (sometimes temporarily) in circumstances where characteristics of the market have militated against a private sector business case or where there was clear evidence of private sector failure to provide efficient clearing systems. For example, in Italy, the central bank was for many years the major shareholder in Società Interbancaria per l'Automazione (SIA) (the payment processor for several clearing systems and for the Italian interbank network), together with the Italian Bankers' Association. It disposed of this shareholding in early 2000, because it considered that its participation was no longer necessary.

3.2.14 Some central banks also see the provision of services as a route to enhanced understanding of and influence over the retail payments sector, so assisting them in their other roles, for example as payment system overseers.

3.2.15 In some cases, the provision of clearing and other related services is mandated by law. For example, a provision of the Bundesbank Act in Germany confers on the Bundesbank the right to take an operational role in the field of retail payments. In the United States, the Federal Reserve plays a dual role in the payment system as operator and regulator. In 1913, the Federal Reserve Act established a central bank in the United States, in part to provide services to member banks in order to improve the payment system. The Monetary Control Act of 1980 expanded the Federal Reserve's operational role by requiring it to provide its services to all depository institutions on an equitable basis, taking into account the need to ensure an adequate level of services nationwide. In 1998, after public consultation, the Committee on the Federal Reserve in the Payments Mechanism (Rivlin Committee) recommended that, notwithstanding changes in technology and in markets, the Federal Reserve should remain a provider of both cheque collection and ACH services, with the explicit goal of enhancing the efficiency, effectiveness and convenience of both systems, while ensuring access for all depository institutions. The Bank of Italy's provision of clearing services is partly a reflection of a Decree Law of 1926, and it was made responsible for managing the Centrale d'Allarme Interbancaria

by a Legislative Decree of 1999. The maintenance by the Bank of France of databases on cheque payment incidents has a legal basis in the Monetary and Financial Code.

Rationale for providing settlement services

3.2.16 Central banks provide settlement services for retail payments because there are comparative advantages in terms of safety, and sometimes also of efficiency, over private sector provision. Use of central bank liabilities as a settlement asset can be an important safety factor, because participants incur no credit risk or liquidity risk by holding this asset. In addition, fair and open access for banks to central bank settlement services, as far as is compatible with safety objectives, can provide competitive neutrality and so contribute to efficiency. In some countries, economies of scale and scope are also involved; for example, where a central bank settlement infrastructure exists in any event for large-value payment systems and to facilitate monetary policy operations, it can be argued that the efficiency objective is well served if the settlement infrastructure is also used by retail payment systems.

3.3 Oversight role

3.3.1 Oversight of payment systems is a public policy activity focused on the efficiency and safety of systems, as opposed to the efficiency and safety of individual participants in such systems. The primary responsibility, however, for an individual system's efficiency and safety rests with the system's owner and operator. In many countries, the central bank's oversight role is considered an integral element of its function in ensuring financial stability.

3.3.2 There is considerable variation from country to country in the relevant responsibilities and powers and in the manner in which oversight activities are carried out. In some countries, for example in Australia, Belgium, Germany, France, Italy and the Netherlands, the central bank oversees all retail payment systems and arrangements. However, not all central banks oversee retail payment systems in their countries, and, in those countries where the central bank does oversee some retail payment systems, coverage does not always extend to all such systems. For example, the oversight functions of the Swiss National Bank extend only to systemically important payment systems. In Canada, the oversight function is shared between the Bank of Canada and the Department of Finance under a cooperative regime. The Bank of Canada has prime responsibility only for the oversight of systemically important payment systems. In the United Kingdom, the focus and intensity of oversight is dependent on the Bank of England's judgment of the nature of the risks associated with each system. Its primary focus is on systemic risk but, in exercising this judgment, it also acknowledges that an operational failure in some systems handling values insufficient to give rise to systemic risk could nevertheless cause widespread disruption, especially in instances where there is no ready alternative means of making the affected payments. In Japan too, oversight by the central bank is conducted with differing degrees of intensity, depending on the significance of the different payment systems.

3.3.3 In some countries, oversight is focused specifically on the arrangements that underlie individual payment systems. In others, the scope of oversight is broader, extending, for example, to particular types of payment instruments or to certain aspects of the retail payments markets as a whole, in particular certain aspects of their efficiency. In some instances, particularly where the scope of oversight is relatively broad, some of the activities considered in subsection 3.4 are regarded as a part of the oversight role rather than the catalyst or facilitator role.

Authority for oversight by central banks

3.3.4 Many central banks have explicit legal authority with respect to oversight of payment and settlement systems, often supported by specific powers. Such powers can relate to a regulatory regime generally, for example powers to introduce or amend relevant regulations, or they can be exercisable in relation to individual systems, such as powers of direction and enforcement, or powers to approve or disapprove changes to some aspects of a system's underlying agreements or rules. Australian legislation provides an example of particularly wide-ranging central bank powers in relation to retail payment systems.

3.3.5 In many cases, legal authority takes the form of a broad statement in the laws establishing a country's central bank or in other national laws to the effect that the central bank should promote the safe (in some cases also efficient) operation of payment systems. For the countries covered by this report that participate in the Eurosystem⁶ (Belgium, France, Germany, Italy and the Netherlands) and for Sweden, a broad statement of this type forms the basis for the oversight of payment systems and payment instruments overall, including retail payment systems and instruments. In addition, for the Eurosystem the statement is supplemented by a provision that the ECB and the national central banks may provide facilities and that the ECB may make regulations to ensure efficient and safe clearing and payment systems within the Community and with other countries. In France, a recent law, amending the Financial and Monetary Code, explicitly extends the competence of the central bank to the oversight of payment instruments.

3.3.6 By contrast, in Australia and Canada and prospectively in Switzerland, where a revision of the central bank law is in preparation, legal provisions on payment system oversight are very specific.

3.3.7 The Federal Reserve conducts oversight of certain payment systems, including retail payment systems, mainly on the basis of its banking supervision powers and its provision of settlement or other services. The Bank of England's oversight of payment systems does not have a statutory basis, although its role as overseer is referred to and acknowledged in various laws and its responsibilities are set out, in the context of its wider financial stability objectives, in a memorandum of understanding between the Bank of England, the Treasury and the Financial Services Authority (the authority responsible for the supervision of financial institutions).

3.3.8 In some cases, legal provisions confer responsibilities on the central bank for the efficiency and safety of particular instruments. For example, in France, a draft amendment to the Financial and Monetary Code has recently been adopted, extending the competence of the central bank to the security of payment instruments. In Italy, the act that transposes the European Directive on Electronic Money Institutions into Italian law confers responsibility on the central bank for ensuring the reliability of electronic money.

Oversight objectives

3.3.9 The scope and purpose of central bank oversight of retail payment systems vary both in content and in the degree of explicitness and detail of public exposition. In some instances, such as in Australia, the legal provisions establishing the central bank's mandate are themselves relatively explicit and detailed. Some central banks, for example the ECB and the central banks in Belgium, France, Italy, the Netherlands, Sweden, Switzerland, the United Kingdom and the United States, describe their oversight policies and objectives in publicly issued documents. The Eurosystem uses a part of the framework of the Core Principles in its proposed oversight standards for euro retail payment systems, published for public consultation in July 2002 – see Box 1. The Bank of Italy is currently drafting a regulatory framework to define its efficiency and safety objectives for both traditional and innovative retail payments and network infrastructures.

3.3.10 In most cases, the chief concerns of central banks in overseeing retail payment systems are the efficiency and safety of the systems. Both efficiency and safety are explicit in Australia and Italy, for example. In some cases there are also other objectives, such as the exercise of responsibilities in the areas of consumer protection, or the prevention of money laundering, which are, in other countries, wholly or partly the responsibility of other authorities.

⁶ The Eurosystem comprises the European Central Bank (ECB) and the national central banks of the member states which have adopted the euro as their currency. The Eurosystem is governed by the decision-making bodies of the ECB, which are the Governing Council and the Executive Board.

Box 1

Oversight standards for euro retail payment systems proposed by the Eurosystem

In order to carry out its statutory task of promoting the smooth operation of payment systems, the Eurosystem is in the process of defining oversight standards for euro retail payment systems. It issued such standards in July 2002 for public consultation and will adopt them finally after having taken public comments into account. The Eurosystem takes the view that retail payment systems should observe a subset of the Core Principles for Systemically Important Payment Systems,⁷ if such systems play a prominent role in the processing and settlement of various types of retail payments and if their failure may have major economic effects or could undermine the confidence of the public in payment systems and in the currency in general. These retail payment systems always provide settlement services and generally take the form of an ACH system or of multilateral arrangements among the participants.

The subset of the Core Principles that such retail payment systems would need to observe includes Core Principles I (legal basis), II (understanding financial risks), VII (security and operational reliability), VIII (efficiency), IX (access criteria) and X (governance). In addition, it is stated as a highly desirable objective for such retail systems also to observe Principle IV (prompt final settlement).

Since the formulation of the Core Principles is sufficiently broad in scope to apply to a wide range of circumstances, the view is taken that application of some of them to euro retail payment systems that are not systemically important does not necessarily require the same strict interpretation as in the case of systemically important systems. For example, in order to satisfy Core Principle VII, the level of security, operational reliability and contingency arrangements for retail payment systems that are not systemically important does not necessarily have to be identical to that required for systemically important systems. The relevant overseer would, however, have to ensure that euro retail payment systems that are not systemically important meet the particular Core Principle in full to suit the respective circumstances.

3.4 Catalyst or facilitator role

3.4.1 For many central banks, the third category of involvement, as catalyst or facilitator, is a very important policy tool, particularly in relation to retail payments markets, where central banks typically have a lesser degree of involvement as operators and overseers than in the area of large-value payment systems. However, even for those central banks with relatively extensive oversight powers in relation to retail payments, it can be an important tool of engagement. In Australia for example, the government encourages the central bank to exhaust voluntary solutions before using its formal powers.

3.4.2 The description “catalyst or facilitator” is used because, in their various forms of cooperation with the private sector, central banks frequently apply their research and analytical capacities and use their influence to support or speed a market outcome. Central banks can sometimes also bring other tools to their activities as catalysts and facilitators. For example, they can publish information and analysis to promote transparency. They can also use the consultative and cooperative contacts they have with bank supervisors and with other public authorities that have an interest in the design and operation of payment systems. The central bank is in a position to ensure that the interests of efficiency and safety in payment systems have a voice in debates on public policy issues that have relevance for payment systems. Box 2 contains some specific examples of central banks’ activities as facilitators or catalysts.

3.4.3 Central to their activities as catalysts or facilitators are the strong relationships all the central banks have with their country’s financial institutions and with banking or payment associations, however these are constituted in their respective countries. In a dialogue based on these relationships, the central bank is uniquely placed to approach issues from a system-wide perspective, because of its public policy interests, its oversight role, and its ability to take wider public policy interests into account in its operational involvement with individual systems.

⁷ See *Core Principles for Systemically Important Payment Systems*, BIS, January 2001.

3.4.4 Cooperative relationships between central banks and other public authorities with an interest in retail payment issues are also established in all the countries, although their form varies. In certain countries, some such relationships are part of the central bank's oversight activities rather than its activities as a catalyst or facilitator - see also paragraph 3.3.3. For the sake of consistency, however, all cooperative relationships with other public authorities are considered in this subsection.

Cooperation with the private sector

3.4.5 Relationships between central banks and the private sector providers of payment services vary in form. In some instances, the central bank plays a formal role in the governance of retail payment systems. For example, in Australia, Canada, France, Switzerland and the United Kingdom, the central bank participates in some of the private retail clearing organisations and is represented on the board of the country's payment association - chairing it in the case of Canada. The central bank is often also involved at a more detailed level, either participating in or chairing working groups, including groups relevant to the development of retail payment systems. For example, in these five countries the central banks are involved in various working groups of the national payment association and there is similar involvement at this level in some other countries, for example Germany and Italy.

3.4.6 In several instances, the central bank has played an active role in developing a forum within which such dialogue may take place. For example, the Eurosystem has cooperated intensively with the banking industry, particularly within the Co-operation Group on Euro Payments Strategy, to achieve a single euro payments area. In Sweden, the central bank has played a role in setting up a consultative body, the Payments Committee, in which it participates with private sector institutions. In the United States, the Federal Reserve formed an internal body, the Payments System Development Committee, in 1999 as a vehicle for analysing technological and market trends and for consultation between the Federal Reserve and payment system providers and users.

3.4.7 All these forums for dialogue, whether they are part of payment system governance or have a consultative or coordinating function, can serve several purposes in relation to payment system development and the execution of central bank payment system policy. In particular, they can be a focus for cooperative effort, for example in developing infrastructure or determining common standards or procedures. They also serve as vehicles for communication of central bank policy, consultation and exchange of views. In addition, there have been many instances where a central bank has used its involvement as a means of influencing developments more specifically - see Box 2. The central bank's contacts with financial institutions and payment associations in many policy contexts, combined with knowledge and involvement in the payment system field, enable a central bank to exercise considerable influence in such dialogues.

Cooperation with other public authorities

3.4.8 In all the countries, other public authorities also have an interest in the design and operation of payment systems. Such interests frequently include bank and other financial institution supervision, competition, consumer protection, data protection and IT security. The precise mix of official responsibilities in this area varies between countries. In the area of competition, for example, the Bank of Italy has certain explicit responsibilities, whereas, in the United Kingdom, responsibility for these issues lies with the competition authorities rather than with the central bank.

3.4.9 Patterns of cooperation among domestic authorities are in many cases well established and mutually supportive, based, for example, on regular liaison and the sharing of information. Such cooperation is designed to ensure a degree of coordination, such that, for instance, the actions of one authority do not have an unintended negative effect on the objectives of another. The patterns vary, depending on the institutional framework and particular past experience. In some cases, cooperation takes place within a formalised framework and in others it is relatively informal. One example of a formalised framework is in the European Union, where there is a memorandum of understanding between payment system overseers and banking and financial supervisors, which is designed to facilitate cooperation in both normal and crisis circumstances. In Australia, there is a memorandum of understanding between the competition regulator and the Payments System Board of the central bank. In Canada, two relevant forums exist. The Financial Institutions Advisory Committee (FISC), based on statutory instruments, is a forum for cooperation between the central bank, the Ministry of Finance and the authorities responsible for the supervision of financial institutions and for deposit insurance. The Payment Advisory Committee (PAC) is a forum for cooperation between the Bank of Canada and the Ministry of Finance on the oversight of payment systems.

3.4.10 Some areas of responsibility commonly require a particularly high degree of cooperation among domestic authorities and sometimes internationally. These include the prevention of criminal activity in retail payment systems, contingency planning, and the development and adoption of security standards.

Table 1

Central bank settlement and clearing services for retail payment systems

Country	Retail payment systems and arrangements making direct use of central bank settlement services			Retail payment systems and arrangements <u>not</u> making direct use of central bank settlement services
	System/arrangement	Does the system settle gross or net positions?	Does the central bank provide clearing services?	
Australia	APCS (paper-based instruments, mainly cheques)	Net	Yes (netting calculation only)	Credit card systems
	BECS (ACH for bulk electronic retail instruments)	Net	Yes (netting calculation only)	
	CECS (electronic payments initiated by debit cards)	Net	Yes (netting calculation only)	
Belgium	CEC (ACH for credit transfers, cheques, direct debits, bills of exchange and domestic debit and credit card payments)	Net	Yes	International debit and credit card systems
	Clearing house (system for non-truncated cheques)	Net	Yes	
Canada	ACSS (debit card (EFTPOS) payments, interbank ATM card payments, paper-based instruments, direct debits and credits, EDI and other electronic payments)	Net	No	Credit card payments
France	SIT (ACH for credit transfers, direct debits, truncated cheques, telepayments, card payments, ATM withdrawals)	Net	No (from 2002)	International debit and credit card systems
Germany	Bundesbank's RPS (Electronic Retail Payment System for credit transfers, direct debits and cheques)	Gross	Yes	In part, the giro networks of the German banking groups In part, credit card payments
	Bilateral interbank clearing ¹ (for credit transfers, direct debits and cheques)	Gross	No	
Italy	Local clearing (cheques not eligible for truncation)	Net	Yes	Credit card systems
	Retail clearing (low-value credit transfers, truncated cheques, ATM withdrawals, debit cards, direct debits, collection orders)	Net	Yes (netting calculation only)	
Japan	Zengin system (credit transfers)	Net	No	ATM systems ² Debit card system ² Other credit transfer systems Other clearing houses Credit card systems
	Major clearing houses for bills and cheques	Net	No	

¹ Not a formal system, but the bilateral exchange of payments data, which largely follows commonly agreed technical standards. Sometimes referred to as "garage clearing". ² The net positions arising from some of these systems are cleared again, with other payments, through the Zengin system.

Table 1 (cont)

Central bank settlement and clearing services for retail payment systems

Country	Retail payment systems and arrangements making direct use of central bank settlement services			Retail payment systems and arrangements <u>not</u> making direct use of central bank settlement services
	System/arrangement	Does the system settle gross or net positions?	Does the central bank provide clearing services?	
Netherlands	Interpay Clearing and Settlement System (all types of electronic and paper instruments, including domestic credit and debit card payments)	Net - partly gross	No	International credit and debit card systems
	Interpay Telegiro (express credit transfers)	Net	No	
Sweden	ACH (giro, cheques, ATM, non-giro credit transfers, etc)	Net	No	Postal giro (in-house) Visa
	MasterCard	Net	No	
Switzerland	SIC (customer payments)	Gross	No	Postal system Credit card systems
	DTA (direct credits)	Gross	No	
	LSV (direct debits)	Gross	No	
	Bancomat (ATM)	Gross	No	
	EFTPOS (debit card)	Gross	No	
	Tancomat (EFTPOS)	Gross	No	
	CASH (e-money)	Gross	No	
	ECV (cheques)	Gross	No	
United Kingdom	BACS (ACH for electronic debit and credit payments)	Net	No	Credit and debit card systems (largest systems are Visa, MasterCard and Switch)
	C&CCC (paper-based credit and debit transfers)	Net	No	
	LINK (ATM network)	Net	No	
United States	Federal Reserve ACH and cheque services	Gross	Yes	In some instances: credit card networks, ³ ATM networks ³ and multilateral cheque clearing arrangements ³
	Private retail systems (eg cheque clearing house arrangements and private ACH systems) using the Federal Reserve net settlement service	Net	No	
	Bilateral cheque clearing arrangements	Gross	No	

³ The participants in these networks and clearing arrangements may use the Federal Reserve ACH or Fedwire services to make payments that will settle their positions with other participants.

Box 2

Examples of the central bank role as catalyst or facilitator

In **Australia** the Reserve Bank has facilitated a number of developments in retail payments. As a member of the Australian Payments Clearing Association, it attempts to influence the direction taken by retail payment systems. For example, it strongly supported moves to introduce electronic presentment of cheques to facilitate a reduction in the clearing cycle to three days. The Reserve Bank has also encouraged billers to improve customer acceptance of direct debits. It is currently facilitating moves by participants in ATM and EFTPOS systems to improve transparency, competition and efficiency. In addition, the Payments System Board of the Reserve Bank publishes an Annual Report to promote public understanding of payment system issues.

In **Belgium** the central bank participates in various relevant banking industry forums and seeks to establish standards in cooperation with the private banking sector. It also administers the Secretariat of Protocols, an official body for establishing cooperative agreements in the field of information processing in order to facilitate interbank transfers.

In **Canada** the central bank is a member of the Canadian Payments Association (CPA), which operates the national clearing and settlement systems for retail as well as large-value payments, and a senior official of the central bank chairs the CPA's board of directors. It has used its expertise to support a number of policy and project initiatives of the CPA, including the recent PKI initiative. The Bank of Canada also engages in discussions of payment developments and policy issues with the Ministry of Finance, which administers the Canadian Payments Act and oversees the CPA, and with a variety of stakeholder groups such as the Canadian Bankers' Association, the Interac Association and the Retail Council of Canada.

The **Eurosystem** discusses issues of strategic interest in euro payment systems with representatives of private banks and banking associations in the forum of the Co-operation Group on Euro Payments Strategy (COGEPS). One of the major topics of discussion has been possible improvements in cross-border retail payment services in the euro area.

In **France** the central bank works collaboratively with the private sector in various forums established to study, discuss and coordinate the enhancement of payment system architecture, in terms of both efficiency and safety. For instance, the Bank of France vice-chairs the Committee for Banking Organisation and Standards (CFONB), which has set up several working groups to study and promote the simplification of banking operations (including retail payment operations and instruments) and the codification of methods and documents used by banks.

In **Germany** the Bundesbank chairs the Automation Working Party and participates in several working groups of the management committee of the German banking industry's central associations. In these forums it works with the banking sector to develop general agreements on procedures and standards, particularly in relation to traditional payment instruments such as credit transfers, direct debits and cheques. Although it adopts a more hands-off approach in relation to newer instruments such as electronic money, it monitors developments and concerns itself with the security testing of instruments with electronically stored units of value. In this the Bundesbank consults with the Federal Agency for Security in Information Technology, which administers the testing.

In **Italy** the central bank cooperates with the private sector and with other public agencies to promote coherent interaction among all the elements of the retail payment sector and to influence developments in the sector. In practice, all structural changes and all important initiatives in this field are discussed between the central bank and representatives of the private sector, such as the Interbank Convention on Automation (CIPA), the Italian Bankers' Association and the Post Bank. The CIPA Management Committee and general meetings are chaired by a representative of the Bank of Italy, which also provides its secretariat. The central bank has been active in ensuring the non-discriminatory access of the Post Bank to the National Interbank Network, so permitting integration between the postal and banking circuits. Recently, in order to ensure the security and transparency of prepaid e-money schemes, the Bank of Italy has interacted with private sector developers to facilitate compliance with minimum technical and organisational requirements.

Box 2 (cont)

In **Japan** the central bank discusses and shares ideas on current payment-related issues with representatives of private banks and payment system operators. The central bank also plays an important role in the standardisation of payment infrastructure, for example by acting as the national standardisation body for ISO/TC68.

In the **Netherlands** the central bank has been the driving force behind the establishment of an integrated payment circuit for retail payments. This has involved creating efficient links between the Postbank system and Interpay and instituting uniform client input. At the request of the Ministry of Finance, the central bank has recently conducted a study on the tariff structures and the infrastructure of domestic retail payments, in order to assess to what extent the existing structures of the high-volume non-cash payment systems serve the objectives of societal efficiency, competitiveness and innovative potential. The report of the working group, which included participants from the private sector, was finalised in March 2002. On the basis of the report, the central bank has formulated a number of recommendations for improvement, for instance with respect to the role of Interpay, the ACH in the Netherlands, and to the transparency of tariff structures, particularly for consumer payments.

In **Sweden** the Riksbank works actively with all the relevant market participants and is represented on all the relevant committees that work on developing the clearing and settlement infrastructure and enhancing the efficiency and safety of the payment system.

In **Switzerland** the central bank is represented on all the relevant committees that promulgate changes and additions to the existing settlement and clearing infrastructure. It works actively and cooperatively with the private sector, in the interests of efficiency, in order to facilitate interaction between the retail payments markets and the RTGS system, SIC, in which virtually all retail payments are settled. The objective of these activities is to ensure efficiency for the economy, based on Core Principle VIII. This role as facilitator requires the central bank to have a degree of expertise in the retail payments market and, in order to exercise its oversight function, it needs to monitor the market to assess the systemic importance of the various elements of the payment system infrastructure. Monitoring includes, on the one hand, collection of sufficient data to assess systemic importance, and, on the other, maintaining an understanding of the functioning and interdependence of the various elements of the payment services market. Monitoring too is based on the responsibilities of the central bank in applying the Core Principles.

In the **United Kingdom** the Association for Payment Clearing Services (APACS) currently acts as an umbrella body under which three separate companies operate the United Kingdom's main payment systems. APACS acts as a coordinator for discussion by the payments industry on, for example, the development of standards and responses to legal developments. The Bank of England participates in APACS in various ways: as the central bank, it is represented on the governing body; it is an operational member of each of the three clearing companies and acts as their settlement agent; and it participates in a number of APACS committees concerned with particular issues. Through these channels, the Bank of England is able to cooperate with the payments industry and influence the debates. The Bank has also exercised an advisory and support role in the preparation of legislation in some instances, for example in relation to amending regulations in 1996 to remove restrictions preventing cheque truncation.

In the **United States** the Payments System Development Committee (PSDC) has played an active role, working collaboratively with the private sector, in identifying strategies to enhance the long-term efficiency of cheque and ACH services and to move to the next generation of payment systems. For example, the Federal Reserve has recently worked with the banking industry, consumer groups, the Treasury and other interested parties to develop a draft law that would facilitate cheque truncation by addressing several existing legal impediments to the use of electronics in cheque processing. Further, the PSDC has formed a working group of Federal Reserve staff to initiate in-depth discussions with end users of payment services, banks, clearing organisations and other interested parties to discuss key issues shaping the future development of payment, clearing and settlement systems.

Section 4: Market trends and their implications for efficiency and safety

4.1 Introduction

4.1.1 This section describes certain market trends in retail payments in the selected countries and discusses some of their implications for public policy. Its focus is on trends with significant implications for those public policy objectives which are at the core of central banks' interests in retail payments, namely efficiency and safety. Some central banks also have other objectives in relation to retail payments that are not covered in this report. It is clear that, in many cases, as described in Section 3, other public authorities as well as central banks have responsibilities for some aspects of efficiency and safety in these markets and that not all central banks have responsibilities in all the areas considered.

4.1.2 In subsections 4.2-4.5, trends are examined in the following main areas of market change:

- Innovation
- Cross-border payments⁸
- Changes in market integration and consolidation
- New market participants

and some general observations are made about their implications for efficiency and safety.

4.1.3 These implications are considered more fully in subsection 4.6 in four policy areas:

- Legal and regulatory framework
- Market structure and performance
- Standards and infrastructure
- Central bank services

4.1.4 Public policy issues are highlighted in each of the four areas. Each central bank should examine developments in its markets from time to time in the light of these issues, in order to form a view on whether persistent impediments to appropriate market outcomes exist in practice. The degree of central bank responsibility for addressing the individual issues varies from country to country. Possible approaches to the issues are considered in Section 5.

4.2 Innovation: trends

4.2.1 Advances in information technology open up possibilities for innovative products and services in the retail payments markets and for improvements to existing products and services. Both the supply and the demand side are affected.

Retail payment services to end users

4.2.2 Over the past two decades, the most significant long-run trend in retail payment services to end users has been the relative shift in all the countries away from the use of cash for consumer payments towards IT-based payment methods, in particular towards the use of payment cards, but more generally towards electronic credit and debit transfers. This trend was described in Sections 4.2 and 4.3 of the 1999 Report. The trend continues and, in many instances, current innovations in retail payment products and delivery channels are not revolutionary changes, but rather extensions and variations of the previous generation of innovations. Credit and debit cards offer the prime example of new uses for existing payment instruments. They were initially designed mainly for use in point-of-sale

⁸ The term "cross-border payments" is used in this report to refer to payments made across national boundaries, whether the relevant countries use the same or different currencies. However, the special policy considerations applicable to payments made between countries in the euro area (that is, the concern that similar prices and similar services should prevail throughout the single currency area) are not examined in this report.

(POS) contexts, but more recently their use in remote contexts (that is, where the card is not physically present) has been growing significantly. In particular, they have come to be used widely as a means of making payments across currencies and across national borders. They have also become the basis for various new payment applications involving internet communication between merchant and customer.

4.2.3 The main current areas of innovation (described further in Annex A) involve both existing and new delivery channels for payment services. Automated teller machines (ATMs), for example, are extending their scope to provide a wider range of services. Newer delivery channels include the internet and mobile devices. In many cases, new types of payment services are involved, including new arrangements for personal online payments, arrangements for electronic bill presentment and payment (EBPP), payment portal services, e-money schemes and processes for facilitating payments in business-to-business commerce.

4.2.4 In general terms, these innovations tend to be designed to occupy particular niches in the market. Some of them appear to have followed demand. For example, the new arrangements for personal online payments using the internet as a delivery channel followed the demand that flowed from the introduction of internet auction sites. Other innovations seem by contrast to have been supply-led. This is perhaps clearest in the case of software-based e-money schemes, most of which have not yet found a corresponding demand.

Transaction process

4.2.5 The steps involved in the transaction process, namely creation, validation and transmission, were described for different payment instruments in the 2000 Report (Section 2.2.1). For card-based payments, the main focus of the infrastructure support is at the level of the transaction process, whereas, for more traditional instruments, the main focus is usually the clearing. The infrastructure involved in the transaction process consists of the business arrangements, the legal structure and the underlying IT networks and other technical arrangements on which the process is based. The nature of these infrastructure arrangements was described in Annex A to the 2000 Report in relation to debit cards. In view of the large and continuing increase in the number of card-based payments as a proportion of total retail payments, the transaction process has gained in prominence over recent decades as a feature of retail payment arrangements.

4.2.6 The arrangements for the transaction process vary in detail across different instruments and systems, but there are three significant typical (although not universal) differences from the arrangements underlying the clearing of more traditional instruments, such as cheques and electronic credit and debit transfers:

- (i) More traditional instruments are typically exchanged on a par basis, meaning that the payee bank is credited, and the payer bank is debited, the face value of the payment. Pricing to customers (at least to personal customers) has usually tended to be account-based rather than transaction-based. By contrast, payment systems based on payment cards are characterised by transaction-based fees, often including interchange fees. In most systems, the flow of interchange fees is to the card issuer from the merchant acquirer. The merchant acquirer in turn levies service fees or other charges from the merchant.
- (ii) The infrastructure arrangements for more traditional instruments are typically generic, in that all instruments of a particular type are or can be handled by a single system. By contrast, the infrastructure arrangements for card-based payments are typically branded, and brand advertising is an important part of the activities of the governing body.
- (iii) The transaction process (and frequently also the clearing) for card payments is typically in the control of an individual bank or a private sector entity set up for that purpose. By contrast, more traditional instruments are cleared, in many instances, by a public institution (sometimes the central bank) or by an established domestic payment association, usually with a broadly based membership.

Clearing and settlement

4.2.7 Some common trends can be identified in recent developments in clearing and settlement services, some of which are illustrated further in Annex B. They include:

- (i) reduction in manual procedures in cheque processing;

- (ii) developments to increase straight through processing and interoperability;
- (iii) developments to increase safety (eg to increase security and reduce operational risk);
- (iv) developments to facilitate cross-border payments.

4.2.8 There have also been advances in settlement services and, where these are provided by the central bank, also in related central bank services. Examples that have occurred or are being planned in several countries include reductions in the time lag between a payment transaction and its final settlement and increases in the frequency of settlement. These advances have been driven by demand for improved service or by concern about financial exposures. There have also been improvements in some cases in related information or communication services and standards.

Implications for efficiency and safety

4.2.9 The starting premise in considering the implications for efficiency of these innovations is that innovation has the potential to bring about efficiency improvements. The question is whether any persistent impediments prevent the market from realising this potential. The starting premise in considering safety implications is that technological innovations and their application to the retail payments markets may result in new or enhanced risks. The question here is whether adequate levels of safety are being achieved in changing circumstances and whether any factors are inhibiting relevant market developments.

4.2.10 While some long-run trends in retail payment innovation are clear, for example the more extensive use of payment cards, in many areas it is not easy to extrapolate the direction of innovation that is likely to prevail, or to assess in any objective way the current pace of innovation, particularly at the end user level. On the supply side, a large number of new services are brought to market but it may be important to consider whether there are noteworthy areas in which new services have not yet been developed and what such gaps may imply for efficiency and safety. For example, there may be unsatisfied demand for an efficient and safe way to initiate payments from bank accounts over the internet. On the demand side, it may be important to consider the pace of user take-up and its implications. For example, paper instruments (such as cheques) are remarkably persistent in some countries, partly because their pricing by banks tends not to reflect the relatively high costs of processing.

4.3 Cross-border payments: trends

4.3.1 A particular consequence of increasing economic internationalism is a rising need for cross-border payment services. This growing market is, however, at present still small by comparison with markets for domestic retail payments. Reliable data on the number and value of cross-border payments are very scarce. Anecdotal evidence suggests that such payments do not exceed 2% of the total number of retail payments and that the figure is perhaps even below 1%. Possible types of responses from the payment industry to increasing demand could include devising instruments and services to suit these expanding requirements, or improving infrastructures suitable for supporting a potentially "global" utilisation of either existing or new payment instruments. The trends noted below relate to ways in which the industry can be seen in practice to be responding.

4.3.2 The market for cross-border retail payments is relatively fragmented. Box 3 describes the main ways in which such payments are made and notes relevant trends. The main distinction is between credit transfers on the one hand and payment cards and innovative services on the other.

4.3.3 Credit transfers are the less dynamic area. The trends in consolidation in in-house services and correspondent banking described in Box 3 may have facilitated cross-border credit transfer services in some instances. However, in the market as a whole, there have only been limited facilitative developments either towards common standards and best practices or in business and technical infrastructure. Possible infrastructure developments to facilitate cross-border credit transfers could include the creation of links among existing ACHs or the creation of an ACH serving several countries. These possibilities have been mooted in various contexts, including, most recently, in the Single Euro Payment Area ("SEPA") initiative for the euro area. The Euro Banking Association (EBA) plans to establish a pan-European ACH, STEP 2, in mid-2003. In Germany, the Deutsche Bundesbank has started an initiative to link its Retail Payment System (RPS) to this projected ACH. The objective is to offer services complementary to those of the banking industry, as it already does at the domestic level. In response to demand for facilitation between the United States and Canada, the

Federal Reserve began in 2001 to offer correspondent services to domestic financial institutions to enable them to make ACH payments into Canada.

4.3.4 Other methods of payment (notably card-based methods) are used in a widening range of cross-border contexts, made possible by interconnectivity and interoperability among national networks, most notably among the transaction networks for card payments - the ATM, credit and debit card networks. These conditions have been brought about either by bilateral or multilateral agreements between individual network operators in each country or by the development of transnational networks and clearing operations such as those of VISA, MasterCard and American Express. New services and delivery channels (often not specific to the cross-border context) have emerged and continue to be developed based on these arrangements.

4.3.5 A number of studies have been carried out for the European Commission of the charges, speed and transparency of payments across national borders within the European Union. These both pre-date and post-date the adoption of a common currency. They concentrate on payments denominated either in euro or in the predecessor currencies and explore credit transfers at the very low end of the range of values that make up the retail segment and some other low-value cross-border operations. The specifications and the main results of one of these surveys (carried out in 2001) are set out in Box 4, together with some comparative findings from a broadly comparable survey in 1999. These findings suggest that, even in the euro area, where special factors are present, there was little or no improvement in speed or price of service between the dates of the two surveys. There has since been a legislative reaction to this situation and the "Regulation on cross-border payments in euro" was adopted in 2001. There is very little similar information (other than anecdotal) available on a geographically broader basis.

Implications for efficiency and safety

4.3.6 The frame of reference set out in paragraphs 4.2.9-4.2.10 for considering the implications of innovation for efficiency and safety applies to developments in the market in cross-border retail payments as well as in domestic markets. However, some specific characteristics of the cross-border market may be relevant to efficiency and/or safety. In the first place, there may be additional legal impediments in the cross-border market. Second, the cross-border market tends to be characterised by more heterogeneous standards and business practices than domestic markets. Third, the relatively small size of this market may mean higher unit costs than in the domestic market. Finally, in some areas bank mergers may have had a significantly concentrating effect on the market for cross-border credit transfer services.

4.3.7 All four of these factors may have implications for the relative efficiency of current or potential retail payment solutions in the cross-border, as compared with the domestic, context. Some of these factors, particularly legal impediments, can also affect safety. The safety implications of increasing consolidation are discussed in paragraph 4.4.11.

Box 3

Cross-border payment methods

Credit transfers

Banks with an international network of branches or affiliates have long offered **in-house** cross-border payment services, whereby a customer in one place is able to make a payment to the account of another customer elsewhere. The main instrument offered is the credit transfer.

Trend - Bank mergers have increased the prevalence of this means of payment, which are sometimes offered at lower cost than similar payment services using correspondent banking arrangements.

Correspondent banking relationships are also a well established means of making cross-border credit transfers and, together with in-house arrangements, remain the most common means.

Trend - The clearest trend in correspondent services in general is towards greater specialisation and concentration, driven by factors such as bank mergers and the introduction of the euro. Some forms of consolidation have been developed through alliances and joint ventures among clubs of institutions (eg TIPA, linking a tiered network of cooperative institutions internationally; S-Interpay, a similar network of savings banks; and Eurogiro, linking worldwide postal banking organisations and institutions).

Several **non-bank providers of specialist services** (eg Western Union and MoneyGram) provide an in-house credit transfer service. The sending customer makes a specific inpayment, in cash or with some other acceptable payment instrument. Against this, the provider makes cash available to the recipient at another of its offices. Speed is a particular selling point of these providers, whose appeal is particularly to the market for person-to-person retail payments, often for home transfers by expatriates.

Trend - These services have spread geographically over recent years.

Payment cards and innovative services

Credit and debit cards are used extensively for cross-border payments at point of sale. Credit cards, and increasingly debit cards, are also used in a growing range of remote contexts. The use of cards in this context (and also frequently in domestic payments) relies mainly on international networks provided by international organisations (such as Visa and MasterCard) owned by financial institutions located worldwide. These organisations provide their members with services such as authorisation and clearing at the international level through proprietary networks. Some of the types of **innovative services** described in Section 4.2, which in many cases are based on payment cards, are also used in a cross-border context.

Trend - The cross-border use of payment cards has grown in scope and significance over recent years.

Box 4

Survey conducted for the European Commission in 2001:⁹ summary of specifications and results

Researchers carried out credit transfers of €100, card purchases of €25, ATM withdrawals of €100 and €50, and currency exchanges of €50.

Findings on **speed** of credit transfers showed 64% completed within three days and 94% within six days. Average speed differed very little between 1999 and 2001.

Findings on **cost** showed:

- (i) Average total cost of *credit transfer* was €17.36¹⁰ (17.36%), of which €14.26 to the originator and €3.10 to the beneficiary. The average figures here conceal considerable variations - maximum total charge for a transfer of €100 was €45.16 and the minimum €5.47. The average total cost in 1999 was slightly lower, at €17.10. In order to test whether default options conformed with the relevant EC Directive and whether the options were transparent, the researchers (originators) in the 2001 survey did not state that they wished to bear all charges, unless actually asked. Any costs incurred by the beneficiary in the survey reflect a failure to conform with the Directive.
- (ii) Average cost to the originator of the *card purchase* was €0.16 (0.64%), compared with €0.19 in 1999. Annual card charges were not taken into account.
- (iii) Average cost for the *ATM withdrawals* was €3.36 (6.83%) for €50 and €4.17 (4.17%) for €100, compared with 6.14% and 3.84% respectively in 1999.

The survey also focused on **transparency** of charging and of options as to where the costs should be borne. The findings here were extremely varied. In many cases, the options and charges were not apparent on the transfer form, the charges being detailed after the event, either on the debit advice or on the statement.

4.4 Changes in market integration and consolidation: trends

4.4.1 Changes in market structure can be observed that tend both towards and away from greater integration in retail payment systems and markets. The main drivers towards greater integration are advances in technology, the realisation of economies of scale and scope, and more general economic and institutional trends, such as increasing internationalism of economic activity and consolidation in the banking industry and its infrastructure. There is also a countervailing trend, in that the emergence of many innovative niche products (as described above) has brought with it a rise in the number of providers.

4.4.2 Overall, it is difficult to evaluate changes in market concentration. Retail payments markets, particularly local and national markets, certainly remain less concentrated than the markets for large-value payments, and local and national markets have a higher relative significance in retail than in large-value payments.

Effects of mergers and acquisitions

4.4.3 Bank mergers and acquisitions may significantly affect the level of concentration in retail payments markets at various levels. The end user level is probably less directly affected because it is here that the effects are to some extent offset by a rise in niche market players. In clearing and settlement systems, however, participation may become increasingly concentrated as a result of

⁹ *Bank charges in Europe*, report for the European Commission (Directorate-General Sanco), IEIC, May 2001.

¹⁰ The results of a subsequent survey for the European Commission indicate an average total cost of €24.09 for a credit transfer of €100 (comprising €22.70 charged to the originator, €1.19 charged to the beneficiary and a foreign exchange loss of €0.20). See the report *Study on the verification of a common and coherent application of Directive 97/5/EC on cross-border credit transfers in the 15 member states - transfer exercise* of 17 September 2001.

mergers and acquisitions. A consequence could be that, in systems to which not all relevant payment intermediaries have direct access, the market in correspondent services (that is, the provision of indirect access both domestically and internationally) also becomes more concentrated.

4.4.4 Particularly in Europe and the United States, some banks may become involved in a larger number of payment infrastructures, such as ATM and POS networks or clearing and settlement systems, located in the same country or currency area, with the result that the ownership/membership structure of competing networks or systems is likely increasingly to overlap. As many such institutions also participate in foreign clearing systems, they may be able to specialise increasingly in the provision of multicurrency correspondent banking services, possibly resulting in further concentration in the correspondent services market.

4.4.5 Bank mergers and acquisitions also frequently drive internal consolidation, whereby an individual financial institution reorganises its payment-related processing and back office activities so as to concentrate them within a few processing centres. The declining number of processing centres for cheques at large banks is an example. Higher volumes of business and internal consolidation increase the capacity of large institutions to achieve scale economies. Internal consolidation can also contribute to more concentrated markets, because the capability of such institutions to provide other payment intermediaries with correspondent services is also enhanced, attracting further volumes of payments.

4.4.6 Another effect can be a higher concentration of payments processed within an institution (in-house payments). The processing of such transactions is less expensive, as they do not require the exchange of payments and payment-related information among institutions, and so may result in lower charges to end users. Higher concentrations of in-house payments also have the effect of reducing the payment flows processed through traditional clearing systems and, therefore, lead to lower scale economies for such systems. This may in turn affect the structure of these systems. For example, pricing policies may change to reflect higher unit costs and some banks may withdraw from direct membership of the system, further increasing the dominance of large institutions.

Joint ventures and alliances

4.4.7 In the field of electronic banking and commerce, many financial institutions have established strategic alliances with non-bank players (eg software providers, aggregators, providers of portals, telecommunications companies) in order to exploit scope economies. EBPP services are generally provided through joint ventures among banking firms and non-banks. There have also been joint initiatives among international payment card organisations for many years, for example the alliance between MasterCard and Europay, which allowed Europay to benefit from the worldwide acceptance of MasterCard services and MasterCard to extend its acceptance network throughout Europe.

Consolidation of clearing and settlement systems

4.4.8 Consolidation has also taken place in some countries in the area of retail clearing systems. In certain countries, one clearing system processes most paper-based and paperless payment instruments (with the exception of credit cards). In other countries, two or more main clearing systems coexist, but not normally in competition with each other because of specialisation by instrument, locality or type of participant institution. The consolidation that has occurred in recent years in some countries has followed two directions. On the one hand, decentralised systems for paper-based instruments have evolved into a single centralised clearing structure (eg in France and Italy), and, on the other, specialised systems handling a limited range of payment instruments have evolved into systems that process a wider range of instruments (eg in the Netherlands).

4.4.9 At the European level, the introduction of the euro is affecting the level of concentration of retail clearing infrastructures. Within the euro area, some national ACHs are planning to participate in the cross-border market, alongside the cross-border retail clearing system that may soon be established. Retail clearing infrastructures in the euro area may thus become less concentrated in the short term, but the longer term could see some notable degree of consolidation.

Outsourcing

4.4.10 Banks increasingly specialise in the direct provision and marketing of payment accounts and customer services, outsourcing supporting functions, such as processing, accounting, the operation of

data centres and the operation of ATM and POS terminals. Outsourcing makes possible scale economies beyond the reach of many individual institutions and is undertaken with a view to cost reduction. Clearing system functions are also increasingly outsourced to third-party processors. For example, First Data Corporation and Electronic Data Systems are major third-party processors for several clearing systems in the United States, as is SIA in Italy. In Canada too, the Canadian Payments Association outsources some of the processing in its payment systems. Outsourcing may sometimes result in significant concentrations of activity in a single institution or very few institutions. In Germany, for example, payment processing has been concentrated for many years in the service centres of the different groups of banks.

Implications for efficiency and safety

4.4.11 Trends towards greater consolidation constitute only part of the overall picture, as has been noted above. Consolidation has various advantages in terms of efficiency for the institutions or infrastructure arrangements involved, usually based on the exploitation of economies of scale and sometimes scope. The implications for the efficiency and safety of the market overall may, however, be very complex, so that it is not possible to express a general view on whether the effects on efficiency and safety are mainly positive or mainly negative. For example, higher concentrations of activity in a single institution or processing centre, on the one hand, concentrate operational risk, but may, on the other hand, also reduce the relative cost of effective safety measures, such as backup facilities. A complicating factor, particularly in assessing market competitiveness or contestability in changing circumstances, is the multiple (and not necessarily static) dimensions of retail payments markets - local, national and cross-border.

4.5 New market participants: trends

4.5.1 New participants entering the retail payments markets increase institutional heterogeneity in those markets, because they include non-bank institutions and foreign institutions without a domestic presence. Such institutions can differ from traditional participants (primarily domestic banks) in their primary business lines, their operating strategies, their prudential regulatory regimes and in the legal frameworks which govern them. The entry of non-bank institutions into retail payments markets takes two forms, either the outsourcing of activities by banks to non-banks or the direct entry of non-banks into the markets. In most cases, new participants are involved at the end user market level or (particularly in the case of outsourcing) in various elements of payment processing. Direct access to settlement arrangements is frequently not relevant to such service providers; where it is relevant, it is usually complementary to other activities.

Provision of services to end users

4.5.2 Banks are the principal providers of accounts, instruments and services directly to end users in retail payments markets in virtually all countries. In Europe and Japan, postal giro networks are also long-standing providers. The provision of some types of payment services tends to be complementary, if not intrinsic, to the provision of deposits. In addition, in many countries, specific laws and regulations govern the business of banking. In consequence, the lack of full integration of non-banks in the provision of payment services largely reflects these economic, legal and regulatory differences. Recently, however, other financial and non-financial institutions have begun to provide certain types of retail payment services to end users or to support the banks' provision of these services. Although their market shares are generally limited at present, such institutions have begun to play a noticeable role in retail payment systems, particularly in non-European countries. Their main areas of involvement are described in Box 5.

4.5.3 Increasingly too, domestic and foreign-based institutions are forming alliances to provide retail payment services across national borders through a widening variety and number of global systems to effect the transaction process - see Box 3.

Participation in transaction process arrangements and in clearing and settlement systems

4.5.4 The growing involvement of non-banks in some aspects of the transaction process and clearing, either as direct providers of retail payment services to end users or as providers of related support services to banks or other providers of end user services, is noted in Box 5. There is also

established non-bank involvement in private sector arrangements for the transaction process and clearing of card payments. Non-banks are also able, in some instances, to have direct access to central bank clearing services, for example in the United States, although settlement occurs on the accounts of depository institutions at the Federal Reserve.

4.5.5 In most cases, non-bank financial and non-financial institutions providing retail payment services or involved in processing would not be able to have direct access to arrangements for settling retail payments, as a result of statute or policy decisions that non-bank institutions should not be eligible to hold settlement accounts at the central bank. However, the rules and applicable legislation have recently been changed in some cases, for example in Australia and Canada, to admit certain types of non-bank financial institutions. The premise on which the legislative changes in these countries are based is that access to clearing and settlement systems may sometimes be a prerequisite or an enabling factor for the provision of retail payment instruments and services in end user markets. Direct access to these systems is therefore expected to encourage more non-bank financial institutions to enter end user markets. In the United Kingdom, a consultation document was published in 2002 on the central bank's proposed policy in this area. This proposal does not involve legislation. The position in these three countries is summarised in Box 6.

Implications for efficiency and safety

4.5.6 If markets are insufficiently competitive or contestable, efficiency benefits from innovation, consolidation or the exploitation of economies of scope and scale through increasing integration may fail to flow through to end users. Uncompetitive or incontestable markets could have the effect, in turn, of reducing incentives for innovation to improve efficiency and safety further. In this context, developments in market access and their implications for competition assume a central importance. Broadly, open access to retail payments markets might be expected to have positive implications for competition and contestability. However, the associated institutional heterogeneity could alter the balance of risks in the market. For example, increased legal risk may result from differences in incorporation, or differences in regulatory regimes may bring about changed patterns of credit or liquidity risks.

Main areas of involvement of non-bank institutions in retail payments***Established retail payment instruments***

Non-banks have become involved to a limited extent, particularly in Australia, Canada and the United States, in traditional non-cash retail payment instruments. For example, some non-bank financial institutions that provide investment or credit accounts to users, such as investment funds and insurance firms - or even retailers with proprietary credit operations - allow their clients to make payments to third parties using cheques or payment cards. In some other countries, for example Germany, the regulatory regime restricts the provision of payment services to banks. Some general purpose credit card associations, such as MasterCard, permit non-bank financial institutions to be card-issuing members and payment acquirers, although they are required to settle payments through a bank.

Innovative services

Non-banks are involved in some of the innovative services described in Section 4.2. Banks have been the principal participants in the most prominent e-money arrangements, but in many instances non-bank financial institutions have also participated as card issuers and value providers. In some instances, even non-financial institutions have established e-money arrangements, although to date these have remained limited purpose instruments. EBPP service providers include non-bank financial and non-financial institutions. Some payment portals and other "consolidators" (intermediaries between payers, payees and their account-holding institutions, providing access to retail payment services in combination with payment transmission, accounting and processing services) are exclusively linked to a particular bank, but many have arrangements with several banks.

The developing roles of consolidators and payment portals in EBPP arrangements and internet shopping, of payment acquirers in ATM and debit card networks, of non-bank card issuers in credit card networks and of non-bank card issuers and value providers in e-money schemes have made the line between the direct provision of retail payment services to end users by non-banks and the provision of related support services to users and payment providers much less clear than in the past. There is a spectrum of relationships involved. At one end are relationships that can be viewed clearly as outsourcing. Thus, the bank, or non-bank financial firm, provides the end user with a deposit account from which payments are sent and received, as well as access to clearing and settlement arrangements for the payment items. Payment transmission (including authentication and authorisation), processing and accounting are outsourced to non-financial institutions, which are sometimes established as joint ventures of the financial institutions and sometimes are independent service providers. Further along the spectrum, a non-bank contracts with a number of deposit-taking institutions to provide this service to their account holders, as well as with merchants. In these instances, the non-bank is a direct provider of payment services in end user markets but must access clearing and settlement services through a member bank or non-bank financial firm. Further along still, the non-bank contracts directly with the end user for the provision of services, aggregates payments in its own books and makes aggregate payments to the final recipient in direct competition to services offered by banking institutions.

Cross-border provision

Non-banks also have a significant market share in some specifically cross-border instruments such as wire transfers, traveller's cheques and money orders. Western Union and MoneyGram are prominent in this market worldwide. Some non-bank providers of innovative services operate extensively in a cross-border as well as domestic context.

Provision of payment security services

Some non-banks provide services that are related to retail payments and critical to their security, in particular certification services. Providers of certification services are, in many instances, not financial institutions.

Provision of settlement accounts in Australia, Canada and the United Kingdom

Australia

The Reserve Bank of Australia widened the eligibility for exchange settlement (ES) accounts in March 1999. Applicants for ES accounts do not need to be authorised deposit-taking institutions but must be:

- an actual or prospective provider of third-party (customer) payment services with a need to settle clearing obligations with other providers. In general, applicants must be current or prospective members of a payment clearing arrangement or operate a clearing house which acts as a central counterparty. ES accounts will be provided only for settlement of obligations from the clearing process;
- able to demonstrate that they have the liquidity to meet settlement obligations under routine conditions, during seasonal peaks and under periods of stress.

Institutions which are supervised by the Australian Prudential Regulation Authority (APRA), and which satisfy the Reserve Bank that they have the capacity to meet their settlement obligations, are eligible for ES accounts. There are no special conditions attached to these accounts, but they must be maintained in credit at all times. For institutions with only limited payments experience, however, the Reserve Bank may require a transitional posting of collateral to reassure it of the institution's ability to meet its payments. Institutions not supervised by APRA which operate in deferred net settlement systems (a category including a number of retail clearing systems) will have to meet collateral requirements on an ongoing basis, except where they are always net receivers in payment clearing arrangements.

Canada

Recent amendments to the Canadian Payments Act permit life insurance companies, securities dealers and money market mutual funds to become members of the Canadian Payments Association (CPA). As members, they are able to participate in the CPA's Automated Clearing Settlement System (ACSS), which is the principal system for clearing and settling a broad range of retail payments in Canada. In response to these potential membership changes, the CPA is currently reviewing its criteria for becoming a Direct Clearer - or settlement member - in ACSS. Similarly, the Bank of Canada is reviewing criteria for providing access to ACSS settlement facilities, which include a settlement account and a standing loan facility for overnight credit.

At present, under CPA by-laws, life insurance companies and money market mutual funds are ineligible to be Direct Clearers in the ACSS. To be a Direct Clearer, other, eligible CPA members must have a minimum share of 0.5% of the annual number of payment items cleared nationally through the ACSS and have access to Bank of Canada settlement facilities.

Box 6 (cont)

United Kingdom

The Bank of England published a consultation document in January 2002 on its proposed policy on the provision of settlement facilities to payment systems and their members. The document lists four main arguments in favour of a central bank acting as settlement agent for a **payment system**: risk reduction (use of central bank money), service assurance (eg in crisis situations), competitive neutrality, and efficiency (eg when acting for a number of systems). Counterarguments include competitive distortion, direct risk and moral hazard. The proposed policy for sterling settlement accounts distinguishes between:

- *systemically important payment systems*, for which the Bank of England will act as settlement agent;
- *payment systems of system-wide importance*, where requests from system operators on any of the four grounds mentioned above will be considered, but the Bank of England will not actively seek the role of settlement agent. Significant retail systems would typically be included here.
- *other systems*, where the Bank of England would not normally expect to act as settlement agent, but would be prepared to consider requests, for example on grounds of competitive neutrality or efficiency. Examples would be small credit card schemes for which there are ready substitutes.

The Bank of England will normally be prepared to open (but will not insist on) a settlement account for all **members** (including non-banks) of systems for which it has decided to act as settlement agent. The terms and facilities associated with the settlement account will vary according to the nature of the member (and carry no implication that the Bank of England would be prepared to extend emergency financial assistance to the institution concerned).

Intraday credit would normally only be granted to those participants who are members of systemically important systems.¹¹ Institutions which are solely members of other less systemically important systems would be expected to prefund their accounts before settlement can be effected.¹² In all cases, the Bank of England will retain an element of discretion, though only in exceptional circumstances would it refuse to open a settlement account for institutions eligible under the proposed criteria.

4.6 Implications for public policy objectives

Introduction

4.6.1 This subsection examines more fully the implications of the selected trends in retail payments markets identified and described in the preceding subsections for those public policy objectives in which central banks have a key interest, namely efficiency and safety. The implications are grouped into four policy areas:

- Legal and regulatory framework
- Market structure and performance
- Standards and infrastructure
- Central bank services

¹¹ EEA credit institutions will be eligible to maintain such accounts, and the Bank of England will consider granting facilities to other regulated financial institutions (eg investment firms).

¹² All payment system members would be in principle eligible for such accounts. This can - and already does - include non-financial institutions, such as firms which specialise in secure cash handling which have become ATM operators. These are members of the LINK network of ATM machines, which has settlement facilities at the Bank of England.

4.6.2 Attention is also drawn to the policy issues that these implications raise. These issues (highlighted in bold type below) relate to the possibility of various persistent impediments to appropriate market outcomes. Some of the issues may be relevant at more than one level of the market. Central banks should examine developments in their markets from time to time in the light of this framework of issues, in order to form a view on whether such impediments exist in practice.

4.6.3 The degree of central bank responsibility for addressing the individual issues varies from country to country. It is clear that, in many cases, as described in Section 3, public authorities other than central banks have relevant responsibilities. It may, therefore, also be appropriate for such authorities to consider some of these policy issues.

Legal and regulatory framework

4.6.4 In this context, the legal and regulatory framework defines the rights and responsibilities of all parties and elements of a retail payment system. The highlighted issues concern the effect of legal and regulatory provisions on retail payment systems and instruments. Such provisions sometimes fail to keep pace with market developments, with various detrimental effects, for example on innovation, competition or end user protection. Some provisions that have such effects may conform with public policy but in other cases they may have had unintended consequences.

4.6.5 One pertinent issue in this context is **whether the legal and regulatory framework is sufficient and consistent** so as to avoid unintended ill effects and damaging uncertainties. Such uncertainties can affect efficiency as well as introducing legal risk, not least because a perception that a particular payment method may not be legally sound can affect user acceptance. This issue can arise in a domestic context but where more than one jurisdiction is involved, there may be a greater likelihood of gaps and inconsistencies. A particular issue is, therefore, **whether the legal and regulatory framework supports efficient and safe cross-border payments.**

4.6.6 **The legal framework may fail to keep pace with changing circumstances**, in particular technical innovation and the changing profile of market participation. Just as innovations in the market and its new participants need to respect basic legal principles in the means by which they meet customer demand, so the legal instruments that express such principles may require adaptation to support valid commercial developments. Thus, new payment products and services can fall outside the scope envisaged by existing laws and regulations. For example, innovative features can affect the legal construction of a traditional payment instrument, or legal provisions specifically applicable to traditional instruments may not be applicable in other contexts, for example to e-money. The lack of an adequate legal framework to support the use of electronic signatures or the electronic presentment of cheques would be further examples. If such failures to respond to changing circumstances affect the ability to construct effective contractual agreements, both the efficiency and the safety of the market can be affected. **Resultant uncertainties, for example about the rights and responsibilities of the provider and the customers for a new service, can impede innovation** by potential providers and/or deter user acceptance.

4.6.7 **Legal or regulatory provisions can obstruct market entry** or impair competition between different types of institutions operating in the market. Provisions with these effects can, however, in many cases have a valid and current rationale, based, for example, on safety considerations. Outright restrictions on access are common at the settlement level and are considered further in paragraph 4.6.27. Outright restrictions also occur at the end user level, for example in some countries legal or regulatory provisions restrict to banks the ability to issue payment instruments. There can also be less direct effects. For example, differences between the legal and regulatory regimes for banks and non-banks can impose differential cost and risk burdens on participants that can distort incentives to cooperate in network arrangements and compete efficiently in payment service markets.

4.6.8 **Existing regulations countering the criminal use of retail payment systems and instruments can also prove inadequate** when applied in relation to increasingly varied types of payment methods and market participants.

Market structure and performance

4.6.9 Market competition or contestability is the main route to maintaining efficiency in changing circumstances in the retail payments markets. A particular characteristic of these markets is that competition among market participants needs to coexist with the mutual cooperation that is required in the context of their participation in certain infrastructure arrangements. In addition, certain other

aspects of market structure and behaviour can be relevant to efficiency. Thus, transparency can facilitate efficiency (as well as enhancing end user protection), as can pricing structures that reflect appropriately the level and allocation of costs, risks and benefits of different services.

4.6.10 A key issue is ***whether the market achieves an adequate balance between competition and cooperation to benefit market users***. More specifically, it is pertinent to consider whether, ***while also preserving safe systems, the market structure supports innovation and new market entrants*** and whether ***existing access restrictions serve to promote or impede competition and contestability***.

4.6.11 A degree of cooperation is required among market participants in the context of their participation in certain infrastructure arrangements (particularly some of those performing clearing and settlement), which possess some of the characteristics of a public utility. The issue in such cases is whether this cooperation results in support for improvements in overall market efficiency and safety in changing circumstances. Established networks are a typical context in which this issue might arise. They have the potential to provide a stepping stone for innovation, but are often also in a position to create entry barriers that impede competition and innovation. They can create entry barriers either by imposing access restrictions or by more indirect means, for example by a choice of standards and rules that are inappropriate, difficult or costly for other initiatives to adopt. The rationale for such choices is likely, at least in part, to reflect a desire to protect the franchise. Safety considerations, however, such as the containment of operational risk, or the need to sustain cooperative requirements while limiting cost can also underlie such choices.

4.6.12 Some infrastructure arrangements, however, do not have public utility characteristics, but operate in a competitive or at least contestable environment. Many transaction process arrangements are typical examples. The issue in these instances is whether the structure of the cooperative agreements (in particular access restrictions) underlying them serves to promote competition in the various markets for, and served by, those infrastructure services. In such cases, participants' incentives to develop or improve the infrastructure may depend on the prospect of accruing benefits through access restrictions.

4.6.13 A further issue is ***whether market transparency is adequate to promote competition and contestability and to support end user protection***. Transparency about the quality and price of services facilitates user choice and hence competitive market conditions. Transparency can also affect user acceptance of innovative services and it can be important to end user protection. User acceptance is a clear hurdle for innovative payment services and new delivery channels. Customers often rely on traditional, possibly less efficient instruments or delivery channels, because they tend to lack confidence in the new products. In part, the reason for this may be a perception (justified or not) that a particular new product entails significant risks, for example security or legal risks. New users are likely to wish to compare the product with familiar payment methods in terms of functionality, costs, availability and ease of use. They are also likely to wish for reassurance about its security, reliability and confidentiality and that responsibility and liability implications are adequately defined and not unduly onerous for the user. User acceptance depends on an assessment of these factors, which is facilitated if relevant information is readily available for comparison. It is often not clear that this is the case and market incentives may not always favour effective transparency, which, of course, carries a cost.

4.6.14 Another issue is ***whether the pricing structure encourages an efficient allocation of resources and payment risks***. The main factor to consider is whether users face prices in proportion to the benefits they obtain and any costs or risks they pose. If this is not the case, competition on price can be distorted.

Standards and infrastructure

4.6.15 Appropriate standards and infrastructure are key elements in the platform for successful innovation to improve efficiency and safety. In this context, "standards" should be interpreted widely, to include relevant technical and procedural standards and guidelines on sound practices. Relevant infrastructure arrangements can include all aspects of arrangements for effecting the transaction process and for clearing and settlement.

4.6.16 One pertinent issue is ***whether security arrangements (including arrangements for confidentiality, authentication, integrity, authorisation and non-repudiability) are adequate and keeping pace with changing circumstances***, in particular with technological changes. Security is a

key element for the success of all kinds of payment innovations. New types of payment instruments and services or new uses of existing instruments may entail new or enhanced risks. For example, the potential for fraud in the remote use of credit and debit cards and experience of its occurrence may acquire increasing significance as the scale and scope of remote use increases. As a further example, electronic commerce can involve the use of electronic data interchange (EDI), electronic mail and online transactions across public networks such as the internet. Electronic commerce is vulnerable to a number of network threats which may result in fraudulent activity, contract dispute and disclosure or modification of information. Security is important to user confidence and acceptance, so that, for example, an inadequate response to new or enhanced risks could impede use of innovative channels for payment instruments, such as the internet. Risk management, including measures to safeguard security, was discussed in Section 4.2 of the 2000 Report. The integrity of data that are exchanged and the authentication of the parties participating in a transaction are some of the key issues that need to be addressed, and cryptographic techniques may have a key role to play. In practice, the development and implementation of appropriate safeguards to counter new or enhanced risks in innovative areas may not always keep pace with developments in functionality.

4.6.17 In some cases, an appropriate balance needs to be struck between customer privacy and other aspects of security. For example, making available certain types of information in order to authenticate an identity may raise considerations of customer privacy.

4.6.18 Another issue is ***whether adequate measures are in place to safeguard operational reliability*** in the light, particularly, of technological and institutional changes. Because of the dependence of innovative services and delivery channels on IT, operational risks importantly include transmission capacity and continuity. Increasing concentration of retail payments activity (eg in a single large market participant, in a system effecting the transaction process, or clearing or settling payments, or in an institution to which particular activities have been outsourced by a number of market participants) can affect risks in this area in various ways. For example, it could increase the impact of operational failure or disruption, but, equally, economies of scale could mean a higher quality of service continuity arrangements and operational controls at a lower cost to users.

4.6.19 The prevalence of outsourcing of IT services in these contexts is also worth particular note. Critical concentrations of operational risk may not be apparent or fully appreciated, as a result of multiple institutions or systems outsourcing to the same suppliers. In addition, reliability here is dependent not only on the underlying arrangements and controls, but also on the appropriateness and comprehensiveness of contractual provisions, service level agreements and other guidelines, and on their enforceability.

4.6.20 The interdependency among participants in infrastructure arrangements and the shared nature of risk that is usual in these arrangements make sound risk management potentially more important at these levels than at the level of end user markets. It is pertinent to consider ***whether infrastructure arrangements are sufficiently robust to address any increasing concentration of risk within institutions and systems.***

4.6.21 ***Market incentives*** may or may not favour the ***development of standards*** and, thereby, ***an appropriate degree of interoperability***. The development and adoption of operating and other standards plays a key role in the evolution of payment technologies, which was discussed in Section 4.3 of the 2000 Report. In particular, agreeing and implementing harmonised standards can make interoperability possible among different products and processing arrangements. This, in turn, can facilitate the development and acceptance of new initiatives, by enabling them to exploit network effects. Network effects are an important feature of retail payments markets, especially at the end user level. They have a crucial effect on the pace and direction of innovation, as, from the point of view of the end user, a particular new payment service may be of comparatively little value so long as payments can be made and received with only a few counterparties, but its value grows as the number of potential counterparties rises, and, from the merchant's point of view, there may be a threshold of use below which the costs of accepting a particular payment instrument cannot be recouped. In practice, considerable interoperability exists in some areas of retail payments, for example among ATM and EFTPOS networks and between card networks and services based on them.

4.6.22 The absence of common standards and practices may be an impediment to increased efficiency and safety. The ability of new initiatives to exploit network effects through interoperability, on the other hand, is likely to improve competition in many market contexts, both domestically and cross-border, hence enhancing efficiency. However, market incentives for the providers of infrastructure services and their participants may not favour standardisation and the establishment of an appropriate

degree of interoperability. In the first place, coordination and cooperation among groups of market participants are required to develop and adopt standards. Second, these activities and the establishment of interoperability carry a cost, which is not necessarily borne by those to whom the benefits accrue.

4.6.23 The effectiveness of ***governance structures for infrastructure arrangements may be relevant to facilitating innovation and ensuring appropriate levels of safety for all payment system participants***. An effective and responsive governance structure may be of particular importance where significant changes need to be made to the rules and procedures of the arrangement. The rules and procedures of a payment system are its fundamental element, typically including agreement on the technical infrastructure it will use and the instruments it will process. Together with the legal and regulatory framework within which the system operates, the rules and procedures are also key to risk control. As circumstances change, rules and procedures may need to be altered to accommodate innovations and/or new types of participants efficiently and safely. For example, institutional heterogeneity among participants can affect the distribution of risks and costs between different categories of member institutions. A system's rules might therefore need to be changed to compensate for the effects on efficiency and safety of differences in corporate powers, regulatory standards and possibly bankruptcy regimes.

4.6.24 Greater concentration in the end user market may result in infrastructure arrangements that possess some of the characteristics of a public utility becoming controlled by a certain dominant user or users. The implications for governance may need to be considered. For example, it may be possible for the dominant participant(s) to disregard the needs of smaller participants in decisions related to fundamental features of a system (eg standards, technology or pricing policies) to the possible detriment of efficiency (eg support for innovation) and safety.

Central bank services

4.6.25 The key issues are ***whether central bank services are provided transparently and are keeping pace appropriately with changing patterns of market demand*** and, more specifically, ***whether access to central bank services is arranged so as to facilitate innovation and competition while containing moral hazard and credit risk***.

4.6.26 Adapting central bank services to keep pace with changing patterns of market demand can improve market efficiency and safety. For example, responsiveness to market advances in technical standards can be relevant to both. A reduced time lag between a payment transaction and its final settlement and/or increases in the frequency of settlement can reduce the financial exposures between institutions involved in the settlement process. The extent of use of central bank settlement services also has an effect on risk within settlement systems, because the use of private assets (eg commercial bank assets) for settlement rather than central bank assets exposes the parties involved to credit risk and liquidity risk vis-à-vis the provider of the settlement asset.

4.6.27 Where settlement takes place over members' accounts at the central bank, broader access to settlement services entails wider availability of central bank account services. This may have both efficiency and safety implications. One implication for safety is that a degree of risk (particularly credit risk) or moral hazard may be introduced for the central bank. The degree of risk may, for example, be assessed as differing between regulated and unregulated institutions. The terms on which an account is provided are relevant to risk considerations. For example, the terms can involve no granting of credit, or only fully collateralised credit. A central bank may also need to take into account that there may be additional advantages for an institution in holding a central bank settlement account, for example in terms of its market standing.

4.6.28 The changing composition of the market may lead to demand for access also to clearing and other services provided by the central bank. This may raise some of the same considerations, with the exception of those related to credit risk.

4.6.29 Transparency in the provision of services, for example over pricing and access, can be an important element in the effectiveness of such services in supporting efficient and safe retail payment systems. Transparency by central banks in relation to their role and policies in retail payments more generally, including their provision of services, is discussed in paragraph 5.5.2.

Section 5: Possible approaches to policy issues

5.1 Introduction

5.1.1 Section 5 considers possible approaches to the issues identified in the preceding section. Four public policy goals are put forward for maintaining and promoting efficiency and safety in retail payments in the light of these issues. The goals are intended for central banks, but may also be of relevance for other public authorities with an interest in the efficiency and safety of retail payments.

5.1.2 The actions that central banks and other public authorities might take to further these goals could vary greatly, depending both on conditions in the relevant markets and on the institutional context in each country. This report is concerned only with the possible contribution of central banks. It considers their role in addressing the issues, taking account of the institutional variations between countries, and sets out a range of possible actions for central banks. Within the range, certain minimum actions are recommended as appropriate for all central banks. Other possible actions identified, beyond the recommended minimum, may be suitable for some central banks and may, under some circumstances, constitute an appropriate policy response. The range of actions draws on the analysis in Section 3 of the three modes of engagement by central banks in retail payments, demonstrating how central banks might (and, in many cases, already do) act in their capacity as catalyst or facilitator, overseer or operator to further the policy goals.

Policy goals

5.1.3 The four public policy goals are summarised below. They are all relevant for central banks and the first three may also have relevance for other public authorities with an interest in the efficiency and safety of retail payments. The fourth concerns only central banks, as it relates to their provision of services. The public policy goals apply, respectively, to each of the four policy areas in which issues were considered in Section 4.6. Their focus is on resolving the issues identified, but they would not necessarily alone be sufficient for that purpose.

Policies relating to the efficiency and safety of retail payments should be designed, where appropriate, to:

- (a) address legal and regulatory impediments to market development and innovation;
- (b) foster competitive market conditions and behaviours;
- (c) support the development of effective standards and infrastructure arrangements;
- (d) provide central bank services in the manner most effective for the particular market.

Range of possible actions for central banks to further the public policy goals

5.1.4 The range of possible actions for central banks begins, for each policy area, with certain minimum actions recommended as appropriate for all central banks. These actions have some common themes. In the first place, it is important for a central bank to possess the capability to undertake **monitoring activities**, as appropriate in its market. Second, particular emphasis is placed on a **cooperative and advisory approach** by the central bank, both towards the private sector, consistent with the central bank preference for market solutions in most cases, and towards other public authorities because, in many cases, the relevant issues may be a shared responsibility.

5.1.5 The recommended minimum actions are not intended to imply uniform activity by central banks in relation to all retail payment systems and instruments, but to be consistent with a central bank paying greater attention to those systems and instruments which it judges to have greater significance for the public interest, because they could give rise to significant welfare losses if, for example, they are seriously disrupted or subject to abusive trade practices. Factors relevant to such judgments could include the number or value of payments made through a particular system, or the likely effect of a loss of confidence in a particular instrument on public confidence in retail payment systems more generally.

5.1.6 Beyond the recommended minimum, further possible actions are also identified. The scope and preferences of an individual central bank in relation to these further actions depend on the

particular nature of its involvement in retail payments and on its specific responsibilities and powers. For example, a central bank's mandate may prohibit, or may not provide for it to take, certain types of actions. Moreover, conditions in the national market may or may not warrant certain types of actions at a given time.

Possible modes of engagement by central banks

5.1.7 A central bank's choice of actions takes place within the framework of the three modes of engagement described in Section 3. Such choices are not necessarily mutually exclusive; indeed, the different modes of engagement are frequently employed in ways that are mutually supportive. It was emphasised in Section 3 that considerable diversity exists among central banks in these areas, reflecting differences in institutional context and in the past experience of each central bank. This diversity affects the options open to individual central banks. It may also affect their choices from among the available options, because a particular mode of engagement may be more or less effective for one central bank than for another.

5.1.8 The optimal type and degree of central bank involvement needs to be assessed carefully. A central bank's choice may also depend on market circumstances. Central banks normally accord primacy to market mechanisms to achieve appropriate efficiency and safety in retail payments markets, on the grounds that these objectives are normally best served in this way. The recommended minimum actions, therefore, involve the central bank primarily in its role as catalyst or facilitator. Where a cooperative and advisory approach does not suffice to achieve what is judged to be a suitable market solution, it may be appropriate in some instances for central banks to complement this approach with further actions that may involve other tools of engagement, in their capacity as either overseer or service provider. Alternatively, central banks may have to consider the effects of their current or proposed engagements on the market and the related moral hazard implications.

5.1.9 In its engagements on these topics with other public authorities and with the private sector, an individual central bank should make clear its role and major policies in relation to retail payments.

5.2 Legal and regulatory framework

Public Policy Goal A:

Policies relating to the efficiency and safety of retail payments should be designed, where appropriate, **to address legal and regulatory impediments to market development and innovation.**

The central bank should, at a minimum:

- (i) Review the legal and regulatory framework to identify any barriers to improvements in efficiency and/or safety;
- (ii) Cooperate with relevant public and private entities so that the legal and regulatory framework keeps pace with changing circumstances and barriers to improvements in efficiency and/or safety are removed, where appropriate.

The range of possible additional actions could include, depending on the individual central bank's responsibilities, powers and priorities:

- Altering regulations that currently present barriers to improving efficiency and safety, where this is within the central bank's remit and where other public interest arguments do not militate against such action;
- Introducing or proposing new regulations, as the central bank's remit allows, where the legal or regulatory framework is insufficient to support increased efficiency and/or safety;
- Offering expert advice to other responsible authorities, for example in the preparation of relevant legislation.

5.2.1 The legal and regulatory framework can present impediments to potentially positive developments in retail payments, for example the introduction of innovative services or processes or the entry of new market participants. Impediments to such developments can stem either from existing

legal or regulatory provisions or from an insufficient or inconsistent legal or regulatory framework. Inconsistency or incompatibility between legal or regulatory regimes in different jurisdictions may impede, in particular, cross-border payments. Inadequacies of the legal framework in changing circumstances may also facilitate the criminal use of retail payment systems and instruments, especially innovative instruments.

5.2.2 There may, however, be sound and current justifications on public interest grounds for particular legal or regulatory provisions, even though they present an impediment to developments that could have a positive effect on some aspects of efficiency or safety in retail payments. Such justifications could, for example, relate to the control of risk or the maintenance of competitive market conditions. Possible justifications would need to be taken into account in considering courses of action, underscoring the importance of cooperation between central banks and other authorities in analysing the issues and proposing and furthering solutions.

5.2.3 Some central banks may be able, where this is warranted, to supplement activity as catalysts and facilitators with activity as overseers. In this capacity, some may have powers to make relevant changes to aspects of the legal and regulatory framework by removing, altering or introducing regulations. Others may be able to exercise discretion granted to them within the regulatory framework. A possible context for such changes or the exercise of discretion would be the tailoring of the type and intensity of oversight activity to suit the relative importance of particular systems or instruments.

5.3 Market structure and performance

Public Policy Goal B:

Policies relating to the efficiency and safety of retail payments should be designed, where appropriate, **to foster competitive market conditions and behaviours.**

The central bank should, at a minimum:

- (i) Monitor developments in market conditions and behaviours relating to retail payment instruments and services and assess their significance;
- (ii) Cooperate with other public or private entities, as appropriate, to foster competitive market conditions and to address any significant public policy issues arising from market structures and performance.

The range of possible additional actions could include, depending on the individual central bank's responsibilities, powers and priorities:

- Promoting appropriate standards or guidelines for transparency, in cooperation with relevant public and private sector entities;
- Reviewing conditions in the market for cross-border retail payments, with a view to promoting improvements, if such action is warranted;
- Considering and, if appropriate, performing regulatory and/or operational intervention in cases where market forces are judged not to have achieved or not to be likely to achieve an efficient and safe solution.

5.3.1 Market competition or contestability is the primary means of maintaining efficiency at most market levels, although the central bank normally occupies a special position at the level of settlement services. The ability of new participants to enter the retail payments markets, without imposing unacceptable risks on the payment system or its participants, is a critical welfare issue both in this context and as a stimulus to innovation. Market transparency is an important factor in promoting effective competition; it is also an important contributor to end user acceptance of innovative services (in both domestic and cross-border contexts) and to end user protection.

5.3.2 The recommended minimum actions include market monitoring to improve the central bank's understanding of market structures and conditions. This could focus, where relevant, on the composition of the market at various levels (eg end user markets, transaction process, clearing and settlement) and in various market segments (eg cross-border retail payments), on the operation of

network effects, on any access restrictions or obstructions imposed by existing market participants, and on any information asymmetries.

5.3.3 There may be practical limitations to the powers of most central banks to influence outcomes in this area, especially at the level of end user markets. Cooperation is therefore particularly important and market transparency may be a particular focus. Cooperation with the private sector (market participants and possibly consumer organisations) would need to recognise the market forces and behaviours that could bring about or contribute to solutions to issues in this area. Cooperation with other authorities that have responsibility for competition policy or for consumer protection could also be important, where such cooperation is appropriate and within the legislative mandates of a particular country.

5.3.4 Under some circumstances, a central bank may judge that market solutions are not adequate to address failures in competition in a particular area and that effective action in its capacity as overseer may be possible and warranted.

5.3.5 It may also be possible for central banks in their operational role to affect some relevant aspects of market performance, for instance by setting an example in terms of transparency. A review of policies on terms of (or eligibility for) access to central bank services could also be undertaken with a view to examining the potential for improving efficiency (eg by enhancing competition) or for improving safety.

5.4 Standards and infrastructure

Public Policy Goal C:

Policies relating to the efficiency and safety of retail payments should be designed, where appropriate, **to support the development of effective standards and infrastructure arrangements.**

The central bank should, at a minimum:

- (i) Monitor developments in security standards, operating standards and infrastructure arrangements for retail payment systems which the central bank judges to be important for the public interest, and assess their significance;
- (ii) Cooperate with relevant public and private sector entities to encourage market improvements in such standards and infrastructure arrangements, where appropriate.

The range of possible additional actions could include, depending on the individual central bank's responsibilities, powers and priorities:

- Participating actively in reviewing and developing appropriate standards and arrangements, in cooperation with relevant public and private sector entities, where the central bank judges its more intensive involvement to be necessary to furthering the goal;
- Considering and, if appropriate, performing regulatory and/or operational intervention in cases where market forces are judged not to have achieved or not to be likely to achieve an efficient and safe solution.

5.4.1 Efficient and safe retail payment systems frequently require cooperatively developed security and operating standards and infrastructure arrangements to effect the transaction process, clearing and settlement. The operation of such arrangements is frequently also based on cooperation.

5.4.2 The recommended minimum action would be undertaken by the central bank in a way and to a degree that would reflect its particular experience and relationships with relevant public and private sector bodies. For example, the development and adoption of new standards, particularly operating standards, involve significant technical choices, judgments about timing and judgments about the cost-efficiency of change. The premature or too extensive adoption of particular standards may give rise to lock-in effects and obstruct future developments. As the central bank may not have a comparative advantage in making these choices and judgments, the recommended minimum action focuses on its interaction with the market. For instance, the central bank may suggest objectives, leaving the technical choices to the private sector.

5.4.3 The recommended minimum action is directed towards retail payment systems which the central bank judges to be of high public interest significance, whether they are private sector systems or owned and operated by the central bank.

5.4.4 There may be circumstances when a central bank decides to exceed the minimum. Where it judges such action to be warranted, it could, for example, adopt a higher degree of involvement, if there were particular difficulties in achieving the necessary cooperation among private sector market participants to effect important improvements. One example might be the improvement of infrastructure to support efficient and safe cross-border payments. Another might be the development of security standards, or guidelines for managing outsourcing arrangements.

5.4.5 Some central banks may be able to supplement their activity as catalyst and facilitator with activity as overseer where they judge this to be warranted, for example by a failure of the market to deliver an appropriately efficient and safe outcome.

5.4.6 In their operational role, some central banks are also able to exercise a direct effect on standards and infrastructure and may, for example, encourage improvements in security standards, operating standards and infrastructure arrangements in relation to the systems with which they are involved as service providers. Their encouragement of appropriate standards in these systems and their readiness to adopt them themselves can exercise a wider influence. In some circumstances, the central bank might also judge that it should provide the market with certain types of infrastructures to support efficient and safe retail payments, if, for example, the market has not succeeded in developing such infrastructures itself.

5.5 Central bank services

Public Policy Goal D:

Policies relating to the efficiency and safety of retail payments should be designed, where appropriate, **to provide central bank services in the manner most effective for the particular market.**

The central bank should, at a minimum:

- (i) Review and, if appropriate, adapt its provision of settlement services to contribute to efficient and safe outcomes;
- (ii) Be transparent in its provision of services.

The range of possible additional actions could include, depending on the individual central bank's responsibilities, powers and priorities:

- Reviewing the relevant non-settlement services it provides and considering their adaptation to changing market conditions;
- Reviewing policies on access to central bank services and on pricing.

5.5.1 Current trends in retail payments markets can alter the requirements for services provided by central banks with a view to maintaining efficiency and safety in those markets. Appropriate adaptation of central bank services can contribute variously to these goals. It may, for example, encourage the use of central bank settlement services in contexts where it is appropriate for the settlement asset to be free of credit and liquidity risk. In addition, by providing efficient settlement services, central banks may be able to encourage efficient private sector systems. Adaptation could also include reductions in service provision in areas where it is judged that the market has become better placed to provide a particular service.

5.5.2 Policies on access to information services, clearing and settlement services and lending facilities can affect innovation and competition, but these effects need to be balanced against any adverse implications for the central bank in terms of credit risk (in the case of lending facilities) and in terms of moral hazard. Adequate transparency in such activities, for example about pricing of services and about access policies, is an important contributor to their effectiveness in supporting efficient and safe retail payment systems.

5.5.3 Policy Goal D relates specifically to the operational role of central banks. In addition, some of the types of action central banks could take in this role to further Goals B and C are considered above. Cooperation with the market as catalyst or facilitator can be an important adjunct in designing and providing appropriate services.

5.5.4 As described in Section 3, central banks differ in terms of the freedom they have in determining their policies on the provision of particular services. Thus, some central banks may not be able to take certain types of actions, for example, in the areas of settlement account access, service pricing or additional services.

Section 6: Conclusions

6.1 Retail payment systems and instruments are significant contributors to the broader effectiveness and stability of the financial system, in particular to consumer confidence and to the functioning of commerce. Moreover, efficient and safe use of money as a medium of exchange in retail transactions is an essential function of the currency and a foundation of the trust people have in it. For these reasons, the efficiency and safety of retail payments are of interest to central banks.

6.2 The central banks of the G10 countries and Australia are all involved to some degree with retail payments, as providers of relevant services, as payment system overseers, and as catalysts or facilitators of market and regulatory evolution. However, the manner and intensity of their current involvement differ from one country to another. There are differences in the policy mandates of central banks in this area; other public authorities (eg the supervisors of financial institutions and competition and consumer protection authorities) also have an interest in aspects of the efficiency and safety of retail payments to varying degrees. The respective roles of the central bank and the private sector in the provision of services related to retail payments also vary from country to country. The roots of each central bank's specific pattern of involvement lie in the different institutional structures and traditions of each country.

6.3 Against this varying institutional background, retail payments markets have been evolving over the past few decades and are continuing to evolve, in response to advances in information technology and to other changes both within the markets and in their environment. Certain trends in the application of new technology or in business strategy in these markets are of interest to central banks in the light of their possible implications for the efficiency and safety of retail payments.

6.4 The central banks of the countries involved in the report share the view that market mechanisms should be the primary engine for achieving and maintaining both efficiency and safety in retail payments. In practice, however, the market may encounter persistent impediments, so that it is not able in every case to produce appropriately efficient and safe outcomes. The report describes how such undesirable outcomes may result from aspects of the relevant legal and regulatory framework, the structure and performance of the market, the standards and infrastructure used, or the range or terms of provision of central bank services. The existence of such impediments would give rise to policy issues for the central bank.

6.5 The policies of central banks may vary from country to country but they have common themes. These are expressed in the following four public policy goals put forward in the report for policies relating to the efficiency and safety of retail payments. Such policies should be designed, where appropriate, to:

- (a) address legal and regulatory impediments to market development and innovation;
- (b) foster competitive market conditions and behaviours;
- (c) support the development of effective standards and infrastructure arrangements;
- (d) provide central bank services in the manner most effective for the particular market.

The first three of these goals may also be of relevance for other public authorities with an interest in efficiency and safety in this field. The fourth goal concerns only central banks, as it relates to their provision of services.

6.6 The actions that central banks and other public authorities might take to further these public policy goals could vary greatly, depending both on conditions in the relevant markets and on the institutional context in each country. The report is concerned only with the possible contribution of central banks. It places particular emphasis on two aspects of the central bank contribution, namely the importance of, in the first place, market monitoring and, secondly, a cooperative and advisory approach by the central bank towards both private and public sectors. Such an approach towards the private sector is consistent with the central bank preference for market solutions in most cases. In cooperating with other relevant public authorities, central banks typically make a key contribution, based on the comprehensive overview of efficiency and safety in retail payments that they derive from their responsibilities for the currency and for financial stability overall.

6.7 The emphasis on market monitoring and on the adoption of a cooperative and advisory approach is reflected in particular minimum actions that the report recommends as appropriate for all central banks. The report also identifies other, more proactive, options beyond the minimum, which

may be an appropriate policy response in certain circumstances and may be possible for some central banks.

6.8 The differences described in the detail of the nature and intensity of different central banks' current involvement with retail payments would almost certainly be greater still if a wider and more disparate group of countries were examined. Even so, the four public policy goals could be appropriate to such a wider group, although the particular circumstances of a country may be relevant to the approach taken by the central bank in furthering the goals. For instance, the degree of development of a country's retail payments markets may be one of many relevant factors in determining the respective roles of the central bank and the private sector. In particular, the central banks of emerging market economies may need to adopt a more proactive approach, for example in the provision of services, at least in the short term, in order to fulfil their policy responsibilities to promote and maintain efficiency and safety in retail payments. This is consistent with the role of central banks in payment system assessment and reform more generally (eg in the application of the Core Principles for Systemically Important Payment Systems).¹³ The close involvement of banks and other providers of payment services in such processes is important but, where the sector is not yet sufficiently well established or lacks the resources to make an effective contribution, the central bank may need to take on more detailed responsibility for implementation. As the economy develops, the role of the central bank needs to be reviewed.

¹³ See Chapter 10 of *Core Principles for Systemically Important Payment Systems*, BIS, January 2001.

Annex A: Main areas of recent innovation in retail payment services to end users

Annex A describes the main areas of recent innovation in retail payment services and delivery channels in the end user markets. The illustrations are drawn from the current market. They are not intended to constitute a comprehensive list.

1. Innovative uses of credit and debit cards

Internet credit/debit card payments

In order to pay for e-commerce transactions, payment methods using credit and debit cards have emerged which involve the transfer of payment-related information over the internet between the merchant and the customer. Most retail payments from customers to merchants using the internet take the form of credit/debit card payments. These differ from conventional credit/debit card payments in the way the payment information is transferred between the customer and the merchant. Card payments, in particular credit card payments, quickly came to be used in this context because of their wide distribution and acceptance, their convenience and relatively low cost to the consumer (particularly in a cross-border context), and their already widespread use in other contexts which do not involve physical presentation of the card, for example in retail transactions over the telephone.

2. New payment services

New arrangements for personal online payments

Innovations in the area of personal online payments have taken place particularly in the context of internet transactions between individuals, such as the purchase and sale of items placed on internet auction sites. The innovations enable individuals, in effect, to accept payments made by methods previously available to businesses only, primarily credit card payments. The payer connects to the service provider's website and sends the payment data and payee's e-mail address. The provider then sends an e-mail to the payee notifying that he/she is the beneficiary of a payment instruction. In some arrangements, the payment is then made by book-entry transfers over accounts maintained by the individuals in the provider's books or, in others, it is made by transfers arranged by the service provider over the individuals' accounts with a bank. Payment cards or, in some cases, ACH payments are used to fund accounts and withdrawals can be made by various means, such as ACH payments, credit or debit card payments or cheques.

Electronic bill presentment and payment

Electronic bill presentment and payment (EBPP) arrangements are in operation in some countries. EBPP was described in detail in Annex D to the 2000 Report. It is a means of integrating electronically the presentment and payment of bills by using the internet. It allows a biller to present its customer with a bill electronically and the customer to pay the bill using the same platform. Depending on the model chosen, EBPP has the ability to connect authorisation, clearing and settlement processes electronically. For making the payment, electronic credit transfers, direct debits and credit card payments are mainly used, rather than paper-based giro or cheque payments.¹⁴

Payment portal services

Many internet shops offer customers a choice of payment methods and outsource the payment processing in its entirety to providers of payment portal services. A payment portal is a website which gives access to a wide range of payment methods and enables e-payments to be initiated from a

¹⁴ In some cases (eg in the United States), the debit from the consumer's account occurs electronically while the payment to the merchant is still in the form of a physical cheque.

single source. The merchant creates a link between his/her website and the portal's site. To make online payments, customers are directed to the portal's site to select their preferred payment instrument. After the payment is completed, the portal notifies the merchant that the order can be dispatched.

E-money

E-money is value stored electronically in a device such as a chipcard (card-based e-money) or a hard drive in a personal computer (software-based e-money), which is used to make payments by transferring value from one storage vehicle to another. In most existing arrangements, e-money is intended primarily as a means of making low-value consumer payments. Various card-based e-money schemes exist in many countries, but only in a few countries have they achieved any significant penetration. Software-based e-money arrangements, some designed to transfer value via the internet, are mostly still at a pilot project stage or have been discontinued after a short period of operation due to lack of customer interest and acceptance.

Streamlining of business-to-business commerce

Some providers have introduced processes that facilitate domestic and cross-border business-to-business commerce by streamlining and enhancing the chain of activity that begins with a purchase order and ends with a payment. For example, in the United States, service providers offer a range of services to businesses to help facilitate the flow of payments and related information from end to end. A growing number of businesses are hiring these service providers to help them adapt their back-end systems to make and receive electronic payments seamlessly. The enhancement of these systems may also enable the business to accept transaction information related to the payment electronically, thus reducing the manual entry of information and reconciliation tasks.

Other new payment services

– Cumulative collection procedures

These are procedures for the settlement of very low payment amounts. They are independent of particular hardware or software. Service providers accumulate small payments and arrange for their collection either as part of a telephone company's regular billing procedures or in some cases by direct debit to the customer's bank account at regular intervals.

– Mobile phone collection procedures

These are procedures which enable merchants to collect payments by direct debit. In one German example, the merchant sends details of the customer's order to the service provider, together with relevant customer details. The provider then calls the customer on his/her mobile phone and relays details of the payment to be made, which the customer accepts by inputting a PIN. The service provider then initiates a direct debit and credits the retailer's account. In a Swedish scheme of this type, the customer prefunds an account with the service provider and initiates payments from the account by means of a call from his/her mobile phone to the merchant's scheme terminal. This scheme uses postal giro to make daily payments to merchants, subject to a minimum.

3. Innovation in existing delivery channels

Use of ATMs

Using new technology, ATMs have been developed beyond their original function as currency dispensers to offer a range of services, including payment services and access to the internet. It is possible, for example, in some European countries and in Japan to execute credit transfers from an ATM. In the United States, a chain of convenience stores has started to deploy advanced ATMs on their premises, through which cheques can be cashed, money orders created and credit transfers initiated electronically. The range of services continues to expand. In Australia, for example, some ATMs are linked to the internet and include features such as ticketing and bill payment (eg a small pilot conducted by Westpac in the second half of 2000).

Use of EFTPOS and ACH networks

One particular expansion of the use of EFTPOS and ACH networks in the United States is the conversion of paper cheques to electronic payments. For example, an EFTPOS terminal is used to capture the relevant data from a paper cheque for processing through the EFTPOS network.

4. New delivery channels

Internet for the provision of payment services

The internet is used in many contexts, primarily in relation to e-commerce, to access both new and traditional payment services.

Integration of payment and remittance information using the internet

The internet has made it possible for service providers to facilitate the transmission of remittance information to and from businesses and to integrate this information with payment data in systems handling accounts receivable and payable. This integration of information on the underlying business transaction and on the payment can reduce redundancy and costs.

Internet procurement sites and marketplaces

The universal availability of the internet has allowed businesses to establish procurement sites and marketplaces with the intention of streamlining the supply chain for specific industries (eg the automobile industry) and across industries.

Mobile phones for the provision of payment services

The convenience and market penetration of mobile devices, such as phones, has led to the use of wireless networks for payment services to access a payment application at a point-of-sale terminal or over the internet. At present, there are three distinct contexts in which mobile phone access to payment services has been developed, namely bill payment, payment for purchases (eg from vending machines) and stock trading. Penetration varies geographically. Such uses of mobile phones are, for example, relatively widespread in Southeast Asia and in some European countries but relatively uncommon in Australia. In the United States, the main context is stock trading. Wireless devices other than mobile phones have some particular applications, for example electronic toll passes (increasingly common on the east coast of the United States), which use radio frequencies to send signals from vehicles to a server that contains payment information on the vehicle's owner and initiates either a payment from a prepaid account or a credit card payment.

Annex B: Main innovative trends in the transaction process and in clearing, settlement and related services

1. *Increasing importance of the payment card model*

Increasing use of credit and debit cards in a widening variety of contexts and applications brings to the fore the significant differences between the infrastructure arrangements which support card payments (described in Annex A to the 2000 Report in the case of debit cards) and those which support more traditional instruments, such as cheques and electronic credit and debit transfers. In general, where innovative services and new applications are introduced in the current context, they are either based on payment cards or their infrastructure arrangements tend to be analogous to the arrangements for payment cards.

The three main typical differences are described in paragraph 4.2.6. Not all the differences are present in every instance.

2. *Other trends in processing and clearing*

Reduction in manual procedures and other developments in cheque processing

Projects are in hand in a number of countries to reduce expensive manual procedures in cheque processing. In other countries, for instance several European countries, arrangements to achieve this have long been in place. For example, a project for cheque truncation is in progress in Japan, while, in the United States, ACH rules allow cheques to be converted into electronic payments for clearing and settlement through the ACH system.

Developments to increase straight through processing and interoperability

Current projects for improving efficiency by adopting communication standards in clearing systems that are suited to increasing straight through processing and interoperability include the implementation of new communication standards for submitting payment data files in the RPS in Germany and further plans, in Germany and Belgium, to base communication on TCP/IP. In the whole euro area, banks have committed to implementing SWIFT MT 103+ message formats, as well as BIC and IBAN identifiers, in order to achieve straight through processing on a uniform basis.

Developments to increase safety

Developments to increase safety focus principally on security and reliability. Discussion of such developments is in progress in the euro area, where the Eurosystem issued security objectives for electronic money systems for public consultation in March 2002. In addition, for example, initiatives to introduce PKI-based security have been launched in Canada, by the CPA, and in the United Kingdom. The initiative in the United Kingdom has been launched by the ACH (BACS), which will replace its current communication link with its participants with a PKI-based system. This is the first stage in a multifaceted project of systems improvement by BACS.

The operational reliability of the processing and clearing of payment transactions has, for example, been increased in various instances by the development and deployment of transactional load-sharing applications to provide reliable distribution and backup of transactions. Such applications provide a structural guard against the bottlenecks and single points of failure that might occur in the relevant information systems.

In some countries both in Europe and elsewhere, the use of signatures for payment cards has been superseded by solutions that combine use of a PIN with a chip embedded in the card. A programme of transition in this direction has also recently been announced in the United Kingdom.

Developments to facilitate cross-border payments

An example of a development to facilitate cross-border payments is the correspondent services the Federal Reserve has offered since 2001 to all domestic financial institutions in response to demand for

an ACH link between the United States and Canada. The services may be extended to other countries on a pilot basis in the next few years. In particular, the Federal Reserve and the Bank of Mexico have agreed to explore the possibility of implementing an ACH solution that would provide an efficient interbank mechanism for the exchange of payments between the United States and Mexico.

Within Europe, the Deutsche Bundesbank is considering participation in STEP2 (the EBA's planned pan-European ACH for payments in euros). Its intention would be to provide access to the ACH for small banks that do not wish to participate either directly or through a private sector direct participant. This service would be analogous to the service it currently provides domestically through RPS.

3. Trends in settlement and related services

Reductions in settlement cycles and increased frequency of settlement

Driven by demand for improved service or by concern about financial exposures, reductions in the time lag between a payment transaction and its final settlement or increases in the frequency of settlement have occurred or are being planned in several countries.

- In the United Kingdom, Visa and MasterCard have recently adopted same day settlement.
- In the Netherlands, the central bank has implemented multiple daily settlement for retail systems. In its experience, a single daily settlement had led to increased exposures, because end user customer accounts tended to be credited by the receiving bank after the clearing of the interbank payments but before final settlement. The new service solves this problem and moreover enables banks to meet the requests of their larger corporate customers to be informed of their account balance several times a day.

Annex C: Members of the Working Group on Retail Payment Systems

Chairman	Carlo Tresoldi Bank of Italy
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National Bank of Belgium	Philippe Jourquin Jan Vermeulen
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Swiss National Bank	Thomas Nellen
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