DACSI 14-2191

The Giovannini Group

Cross-Border Clearing and Settlement Arrangements in the European Union

Brussels, November 2001

FOREWORD

The evolution of the European economy is the result of the interaction of markets and technical progress. On this interaction are superimposed government initiatives - which should be, and are generally, aimed at reforming national institutions towards greater economic efficiency – as well as co-ordinating initiatives conceived and developed at the European level. Such co-ordination ensures that efficiency-inducing reforms at the national level satisfy compatibility criteria defined by the free movement of goods, services and people within Europe.

In the financial field, the most important co-ordinating initiative has been the process of monetary integration and the elimination of national discretion in the management of monetary policies and of flexible exchange rates within Europe. The initiatives grouped under the Financial Services Action Plan are designed to strengthen the European financial industry, by encouraging both free access and competition, and the creation of more efficient markets.

The financial industry contributes to efficient allocation of capital and risk in an economy and it is a fundamental infrastructure that permits other economic activities to function and develop efficiently. This infrastructure needs in turn another infrastructure, both physical and non-physical, in order to function properly. The latter includes financial market rules and regulations, a payments system, and a system to permit the exchange of financial assets.

In its current project, the consultative group that I chair was asked by the European Commission to address the most basic pillar of the infrastructure that supports financial markets: the system that ensures that securities exchanged within the European economy are properly delivered from the seller to the buyer.

The findings reported here raise some serious concerns. Relative to domestic transactions, transactions within the European economy that occur across Member Sates are far more complex, are hindered by a number of significant barriers and, given the data that the group has been able to collect, are much more costly than domestic transactions. It is perhaps no exaggeration to conclude, from the analysis in this report, that inefficiencies in clearing and settlement represent the most primitive and thus most important barrier to integrated financial markets in Europe. The removal of these inefficiencies is a necessary condition for the development of a large and efficient financial infrastructure in Europe.

This is the first of two reports on cross-border clearing and settlement arrangements in the European Union and focuses on identifying the sources of inefficiency that exist in the current arrangements. A second report – to be published in 2002 – will be more forward looking and will attempt to assess the prospects for the EU clearing and settlement architecture, with a particular emphasis on public policy aspects.

I wish to express my gratitude to Pedro Solbes and Fritz Bolkestein, who have understood very early the crucial importance of efficient securities transactions and have allowed the formation of an excellent and highly effective joint team from DG ECFIN and DG MARKT to tackle these topics. The continuous support and encouragement from Hervé Carré (throughout the life of the group) and David Wright have been invaluable. John Berrigan has been a tireless close advisor throughout the project, has co-ordinated the work of all members of the group and

has skilfully assembled the written report. Special thanks go to Elizabeth Wrigley and also to Lars Boman and Delphine Sallard, who have made major contributions in preparing the report.

I would emphasise, however, that the views presented in the report are solely those of the financial-market experts who have participated in the Group's discussions. All Group members have offered practical advice and support in the analysis and preparation of this report. Among them, I wish to express my special thanks to Martin Thomas, Mattias Levin, Godfried De Vidts and Daniela Russo.

Alberto Giovannini
Chairman

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EXECUTIVE SUMMARY

This report is the first of two dealing with the clearing and settlement of cross-border – or more accurately cross-system - securities transactions in the European Union. The objectives of the report are to assess the current arrangements for cross-border clearing and settlement and to identify the main sources of inefficiency relative to the corresponding arrangements for domestic transactions. A second report, which will be published in mid-2002, will examine the prospects for the EU clearing and settlement infrastructure, with particular emphasis on public-policy aspects.

The clearing and settlement process is an essential feature of a smoothly functioning securities market, providing for the efficient and safe transfer of ownership from the seller to the buyer. The process involves four main steps, which are *confirmation* of the terms of the securities trade, *clearance* of the trade by which the respective obligations of the buyer and seller are established, *delivery* of the securities from the seller to the buyer and the reciprocal *payment* of funds. When both delivery and payment are finalised, settlement of the securities transaction has been achieved. Clearing and settlement of a securities transaction can involve intermediaries in addition to the buyer and seller and the complexity of the process is directly related to the number of actors involved. Accordingly, the greater role played by intermediaries makes the clearing and settlement of a cross-border transaction inherently more complicated than the corresponding process for a domestic transaction

Cross-border clearing and settlement requires access to systems in different countries and/or the interaction of different settlement systems. Investors rarely access a foreign system directly and typically need to use intermediaries to this end. Three main intermediaries are available, i.e. a local agent (which is typically a member of the foreign CSD concerned), an international CSD or a global custodian (both of which provide the international investor with a single access point to national CSDs in various countries via direct membership of the relevant CSD or via a network of sub-custodians in the countries concerned). Less often, investors use links between their local CSD and the foreign CSD. The use of intermediaries in interacting with different systems increases the risk and cost for the cross-border investor and this cost rises with the number of different clearing and settlement systems that must be accessed.

Investor demand for foreign securities has increased sharply within the European Union since the introduction of the euro. However, the EU infrastructure for clearing and settling cross-border transactions remains highly fragmented. Although the infrastructure is consolidating, there remain across the Union a very large number of entities (e.g. 19 CSDs and 2 ICSDs) whose primary business is to play a role in clearing and settlement. In consequence, the pan-EU investor is required to access many national systems that provide very different types of services, have different technical requirements/market practices, and operate within different tax and legal frameworks. The additional cost that is associated with this fragmented infrastructure represents a major limitation on the scope for cross-border securities trading in the Union.

Three types of additional cost can be identified in cross-border clearing and settlement. These are *direct costs* in the form of higher fees for the services provided, *indirect costs* in the form of extra back-office facilities that must be maintained or bought in from an intermediary and *opportunity costs* in the form of

inefficient use of collateral, a higher incidence of failed trades and trades that are simply foregone because of the difficulties involved in post-trade processing across borders. For reasons of feasibility, the analysis in this report has been confined to the direct costs, although there is evidence to suggest that these constitute a relatively minor share of total.

A valid comparison of the clearing and settlement fees for cross-border and domestic securities transactions is precluded by the fact that the nature of the service provided varies from one provider to another. An alternative approach used in this report focuses on the per-transaction income of providers as a proxy for fees. The analysis reveals that the per-transaction income of the ICSDs, which process predominantly cross-border trades, is very much higher (about 11 times) than the per-transaction income of national CSDs, which process mainly domestic transactions. The extent of fragmentation in the EU clearing and settlement infrastructure means that the ICSDs (and presumably global custodians which similarly focus on cross-border transactions) must operate in a complex environment of multiple markets. While allowance must be made for issues of data comparability, it is difficult to avoid the conclusion that the cost differential between ICSDs and the national CSDs reflects the existence of barriers to efficient cross-border clearing and settlement within a fragmented EU infrastructure.

The Group has identified and listed 15 barriers to efficient cross-border clearing and settlement. The barriers have been categorised under the three headings of national differences in technical requirements/market practice (10), national differences in tax procedures (2), and issues relating to legal certainty (3). In considering the scope to remove these barriers, a distinction is made between those that can be addressed by the private sector alone and those that can be addressed only on the basis of government intervention. In this context, there is a consensus within the Group that the EU clearing and settlement landscape could be significantly improved by market-led convergence in technical requirements/market practice across national systems. This would provide for inter-operability between national systems and could deliver considerable benefits within a significantly shorter timeframe than that required for full system mergers. On the other hand, the removal of barriers related to taxation and legal certainty is clearly the responsibility of the public sector. Although many tax-related barriers would lose relevance if investors were free to hold their securities within their chosen taxation regime, there remains a convincing argument in favour of harmonising the procedures for securities taxation as a further means to facilitate the integration of EU financial markets. Barriers related to legal certainty reflect more fundamental differences in the concepts of underlying national laws and would appear more difficult to remove than barriers in the other categories. Nevertheless, a partial solution seems to be available in the proposed EU Directive on collateral management, which is reflected by work currently underway at the Hague conference on private international law.

In conclusion, it is clear that fragmentation in the EU clearing and settlement infrastructure complicates significantly the post-trade processing of cross-border securities transactions relative to domestic transactions. Complications arise because of the need to access many national systems, whereby differences in technical requirements/market practices, tax regimes and legal systems act as effective barriers to the efficient delivery of clearing and settlement services. The extent of the inefficiency that is created by these barriers is reflected in higher costs to pan-EU investors and is inconsistent with the objective of creating a truly integrated EU financial system. A list of such barriers is provided in this report and urgent action is now required to remove them.

Section 1: Introduction

The Giovannini Group was formed in 1996 to advise the Commission on issues relating to EU financial integration and the efficiency of euro-denominated financial markets. The Group consists of financial-market participants and meets under the chairmanship of Dr. Alberto Giovannini. The Commission's Directorate-General for Economic and Financial Affairs provides the secretariat, with officials from the Directorate-General for the Internal Market and from the European Central Bank (ECB) also supporting the Group's work.

The Giovannini Group advises the Commission on financial-market issues.

The Group has produced three previous reports. The first report (1997) considered the likely impact of the introduction of the euro on capital markets[1]; it helped to forge a common approach to the re-denomination of public debt in euro and in establishing common bond-market conventions for the euro-area. The second report (1999) focused on the EU repo market, addressing problems related to national differences in infrastructure, market practices and legal/fiscal frameworks.[2] The third report (2000) examined the scope for improving the efficiency of euro-denominated government bond markets by means of more co-ordinated issuance among the euro-area Member States.[3]

The Group has produced reports on the re-denomination of bond markets into euro, the EU repo market and co-ordinated issuance of euro-area government bonds.

This fourth report[4] focuses on the current situation and prospects for cross-border clearing and settlement arrangements in the EU securities markets. Although the clearing and settlement processes are among the less familiar features of any financial system, they are essential to the safe and efficient functioning of securities markets. Within the European Union, the importance of these processes in a cross-border context has grown in line with the emergence a more integrated and securitised financial system since the launch of EMU. The topic is, therefore, relevant to the Group's mandate in relation to completing the Internal Market for financial services and to ensuring the smooth functioning of the euro-denominated financial markets. More specifically, the Report of the Lamfalussy Committee[5] has underlined the role of efficient clearing and settlement arrangements in delivering the economic benefits from the broader process of EU financial integration. The Committee argues that further restructuring of EU clearing and settlement arrangements is necessary, stressing that "the process of consolidation should largely be in the hands of the private sector". However, the Committee also highlights the public policy interest in having the most cost-efficient, competitive and prudentially sound arrangements possible.

The Group is now examining EU clearing and settlement arrangements in the context of completing the Internal Market for financial services and ensuring the efficient functioning of the euro-denominated financial markets.

Clearing and settlement issues have been examined extensively in other fora, notably the Bank for International Settlements (BIS) with the Committee on Payment and Settlement Systems (CPSS) currently

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[1] "The Impact of the Introduction of the Euro on Capital Markets", A Communication from the Commission – COM(97) 337 of July 1997.
[2] "EU Repo Markets: Opportunities for Change", October 1999.
[3] "Co-ordinated Public Debt Issuance in the Euro Area", November 2000.
[4] See Annex I for a full list of participants in the Group's work in preparing this report.
[5] See "Final Report of the Committee of Wise Men on the Regulation of European Securities Markets" (February 2001).

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preparing a set of recommendations in conjunction with the International Organisation of Securities Commissions (IOSCO). The Group of Thirty (G30) and the International Securities Services Association (ISSA) are also active in this area. Much of the work in these fora has focused on global clearing and settlement arrangements from the perspectives of efficiency, systemic risk and central-bank oversight. While drawing on this work, the Giovannini Group is focusing more narrowly on clearing and settlement in the European Union and particularly on identifying those factors that may hinder the efficient provision of these services between the Member States.[6] In this context, the objective of the Group's work is to inform the ongoing debate by:

Unlike work in other fora, this report focuses on EU clearing and settlement arrangements only, and on the obstacles to the efficient provision of these services for cross-border securities transactions.

- reviewing the current arrangements for cross-border clearing and settlement in the EU markets for fixed-income securities, equities and derivatives;
- considering the requirements against which the efficiency of possible alternative arrangements can be assessed; and
- identifying some of the possible future arrangements for the provision of clearing and settlement services in these markets.

Direct input to the Group's work has come from several sources. Three working groups, representing the main users of cross-border clearing and settlement services, were set up to focus on developments and prospects in each of the three markets under consideration. Market participants have responded to an Internet-based questionnaire focusing primarily on potential obstacles to cross-border clearing and settlement and drivers for change to current arrangements.[7] Several of the main suppliers of clearing and settlement services have made formal submissions to the Group.[8] The Centre for Economic Policy Studies (CEPS) provided the basis for the an analysis of the costs of cross-border clearing and settlement services relative to the costs of corresponding services for domestic transactions.[9] Finally, there have been useful consultations with the G30, which is once again working on global clearing and settlement arrangements with a specific focus on Europe.

Direct input to the Group's work has come from a range of sources.

The Giovannini Group's work on EU cross-border clearing and settlement arrangements will be in the form of two reports. This report will review the current arrangements, highlighting the main inefficiencies in terms of national differences in technical requirements/market practices, taxation and the legal treatment of securities. The intention is to identify clearly the sources of these inefficiencies, assess their justification and consider the scope for their removal. In a follow-up report, the Group will examine issues relating to the future infrastructure for providing cross-border clearing and settlement services within the Union.

A follow-up report will examine issues relating to the future infrastructure for clearing and settlement in the EU.

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[6] See full mandate for the Group's work on EU clearing and settlement in Annex II.

[7] See copy of questionnaire in Annex IV.

[8] Members of the Giovannini Group met with representatives of clearing and settlement providers at the premises of the ECB on 28 May 2001.

[9] These cost calculations are presented in Section 4 and were made in the context of a forthcoming CEPS study on EU settlement arrangements to be published independently of this report.

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This report is structured as follows. Section 2 presents a simplified description of the clearing and settlement process, examines the main channels for availing of these services across borders and considers the extent to which credit risk for the investor is increased in processing cross-border transactions. In Section 3, the institutional arrangements for trading, clearance and settlement of securities and derivatives in the Union are briefly described. Section 4 analyses the costs of clearing and settlement in the Union, highlighting the additional costs relating to cross-border transactions. Section 5 identifies the obstacles to efficient cross-border clearing and settlement in the Union, assesses their justification and, where appropriate, recommends that they be removed.

Section 2: Clearing and settlement of securities transactions [10]

I. Functionalities in the process of clearing and settlement

The clearing and settlement process provides for the efficient and safe transfer of ownership and payment between buyers and sellers in securities markets.

The clearing and settlement processes are essential features of a smoothly functioning securities market. As is the case for any market, the trading of securities involves the transfer of ownership from the seller to the buyer of the relevant instruments as well as a reciprocal transfer of funds in payment. Clearing and settlement are the services that allow these transfers to be made on an efficient and safe basis. Clearing and settlement can be achieved in different ways and can involve several intermediaries in addition to the buyer and seller. The complexity of a securities transaction, i.e. the complexity of the clearing and settlement processes, is directly related to the number of actors involved. In this context, it is worth noting that a cross-border securities transaction normally involves a greater number of participants than a domestic transaction.

The process of clearing and settlement begins when a securities trade has been executed. A series of steps and actions are involved in the process of completing the transfer of ownership of the security and the corresponding payment. For the purposes of exposition, the clearing and settlement procedure can be described in terms of four main activities (see also Chart 2.1):

Four main activities in the post-trade processing of a securities transaction can be identified, i.e. confirmation, clearance, delivery and payment.

- **Confirmation** of the terms of the trade as agreed between the buyer and seller;
- **Clearance**, by which the respective obligations of the buyer and seller are established;
- **Delivery**, requiring the transfer of the securities from the seller to the buyer; and
- **Payment**, requiring the transfer of funds from the buyer to the seller.

Delivery of securities and payment of funds may occur simultaneously but only when both delivery and payment have been finalised is **settlement** of the securities transaction achieved.

[10] The description of clearing and settlement functionalities in this section draws heavily on work by other institutions and bodies, notably within the BIS. For a more complete description of the clearing and settlement process – as well as specific cross-border features – see "Cross-Border Securities Settlements" – Report prepared by the CPSS of the central banks of the G10 (March 1995) and " Recommendations for Securities Settlement Systems" – Report of the CPSS-IOSCO Joint Task Force on Securities Settlement Systems (January 2001).

Confirmation

Confirmation of the terms of a securities transaction takes place via a number of mechanisms, usually determined by the location of the original trade. OTC transactions are typically confirmed directly between the buyer and seller by electronic means, by telefax, or by specialised messaging service. Some trading systems provide automatic confirmation, while other securities exchanges or clearing agents produce confirmations based on data submitted by counterparties. Efforts are underway to reduce the complexity of confirmation and minimise the possibility of errors by streamlining procedures so as to limit the number of times information on the terms of the trade must be transmitted between the various participants.

The terms of a securities transaction can be confirmed either directly between the buyer and seller or indirectly through the securities exchange or a clearing agent.

Clearance

Once the terms of a securities transaction have been confirmed, the respective obligations of the buyer and seller are established and agreed. This process is known as clearance and determines exactly what the counterparties to the trade expect to receive. Clearance is a service normally provided by a clearinghouse, a central securities depository (CSD) or an international central securities depository (ICSD). The latter two also hold securities and allow them to be processed by book entry. Clearance can be carried out on a gross or net basis. When clearance is carried out on a gross basis, the respective obligations of the buyer and seller are calculated individually on a trade-by-trade basis. When clearance is carried out on a net basis, the mutual obligations of the buyer and seller are offset yielding a single obligation between the two counterparties. Accordingly, clearance on a net basis reduces substantially the number of securities/payment transfers that require to be made between the buyer and seller and limits the credit-risk exposure of both counterparties. Clearance can also be continuous (typically when settlement of a transaction is on a gross basis) or discrete (typically when settlement is on a net basis).

Clearance of a securities transaction establishes the respective obligations of the buyer and seller and may be achieved on either a gross or net basis.

Securities markets may avail of a central counterparty (CCP), which is an entity that interposes itself legally between the buyers and sellers of securities by a process of "novation". In consequence, the buyers and sellers of securities interact directly with the CCP and remain anonymous to each other. Some CCPs also offer a netting facility, whereby the CCP offsets all obligations i.e. amounts owed by and to participants in the market and reduces all outstanding residuals to a single debit/credit between itself and each member (rather than a multiplicity of bilateral exposures between members). This further facilitates the management of securities and payments transfers and reduces the credit risk exposure, margin requirements and liquidity needs of buyers and sellers.

Securities markets may avail of a central counterparty (CCP), which is an entity that interposes itself legally between the buyers and sellers of securities.

Settlement

Settlement of a securities transaction involves the delivery of the securities and the payment of funds between the buyer and seller. The payment of funds can be effected in the settlement system or, more

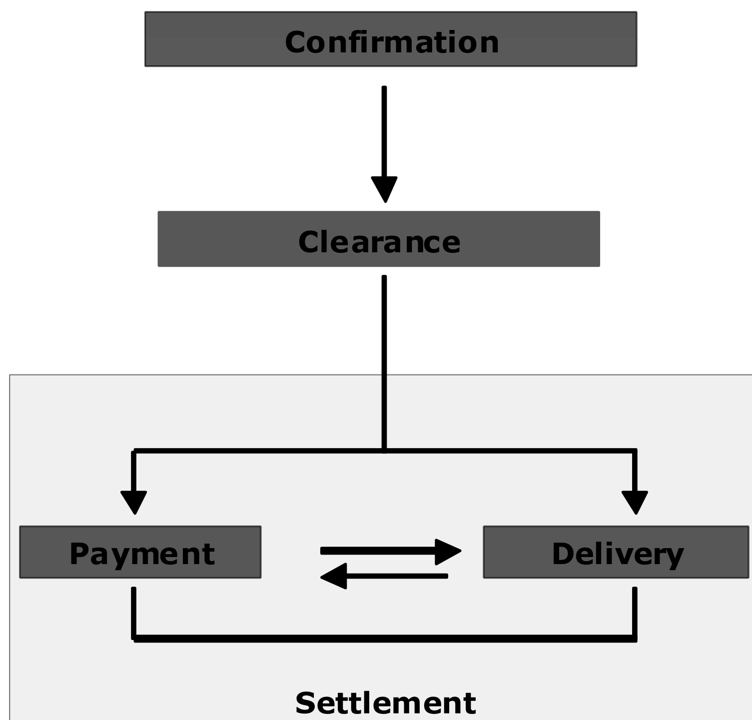
usually, via a banking/payments system. The delivery of securities is typically carried out in a CSD or an ICSD. In the EU, the vast majority of securities are immobilised or dematerialised and can be transferred by means of book-entries (rather than by the physical movement of the securities between buyer and seller). A trade cannot be declared settled until both transfers are final (i.e. cannot be rescinded). Settlement procedures that only allow securities to be transferred to the buyer on condition of payment being received by the seller are known as 'Delivery versus Payment' (DVP). Often, settlement finality can be assured only after the transfer of securities ownership from the seller to the buyer has been formally registered. Many CSDs offer registration as an additional service.

A securities transaction is settled when the securities are delivered to the buyer and the seller has received the reciprocal payment of funds.

The immobilised or dematerialised securities involved in a transaction would typically be held by a CSD. The owners of a security will not necessarily be a member of a CSD and may interact with the CSD indirectly through an intermediary that is a member. These intermediaries or custodians hold securities on behalf of owners and often provide services ranging from monitoring of dividend receipts and interest payments to the management of corporate actions. One by-product of cross-border trading has been the emergence of global custodians, intermediaries in which investors centralise holdings of securities that have been issued in many different countries. These global custodians are typically members of many national CSDs or have access to membership via local sub-custodians.

Securities are typically held in a CSD and managed, on behalf of their clients, by intermediaries that are members of the relevant CSD.

Chart 2.1: Clearing and Settlement of a Securities Trade



II. Specific features of cross-border clearing and settlement

A "cross-border securities transaction" involves market participants buying and selling securities on non-domestic markets and/or undertaking transactions with counterparties in other countries. Such transactions result in a need to receive and deliver securities located in different countries and to make and receive the related payments. The expanding volume of cross-border securities transactions in recent years can be attributed to several factors. In a global context, these factors include technological advancement, the growth in size of financial markets as international capital movements have been liberalised and as financial deregulation has resulted in a wider range of financial products and services. In an EU-specific context, cross-border securities transactions have been further stimulated by the introduction of the euro which brought about more liquidity by pooling markets at least along some dimensions (e.g. currency risk, central bank money), and by continued efforts to complete the Internal Market for financial services.

A cross-border securities transaction involves market participants buying and selling securities on non-domestic markets and/or undertaking transactions with counterparties in other countries.

In general, the clearing and the settlement of a cross-border securities transaction raise similar issues. However, a specific issue related to clearing can arise when there is cross-border use of a central counterparty. If a transaction is novated to a central counterparty, then the two parties to the transaction must be members of the clearinghouse involved or be able to operate through a general clearing member. They must be able to deliver to and receive from the clearinghouse involved the necessary securities and cash. This implies that both the participant and the clearinghouse must have access (directly or indirectly) to the relevant systems. In practice a CCP can only offer novation of transactions involving securities to be settled in the CSDs where the relevant links are in place. For example, Brokertec offers central counterparty functionality for a variety of European bonds settled in systems to which LCH has membership or access. The other main alternative bond trading system, MTS, is currently examining the scope for providing such a functionality also.

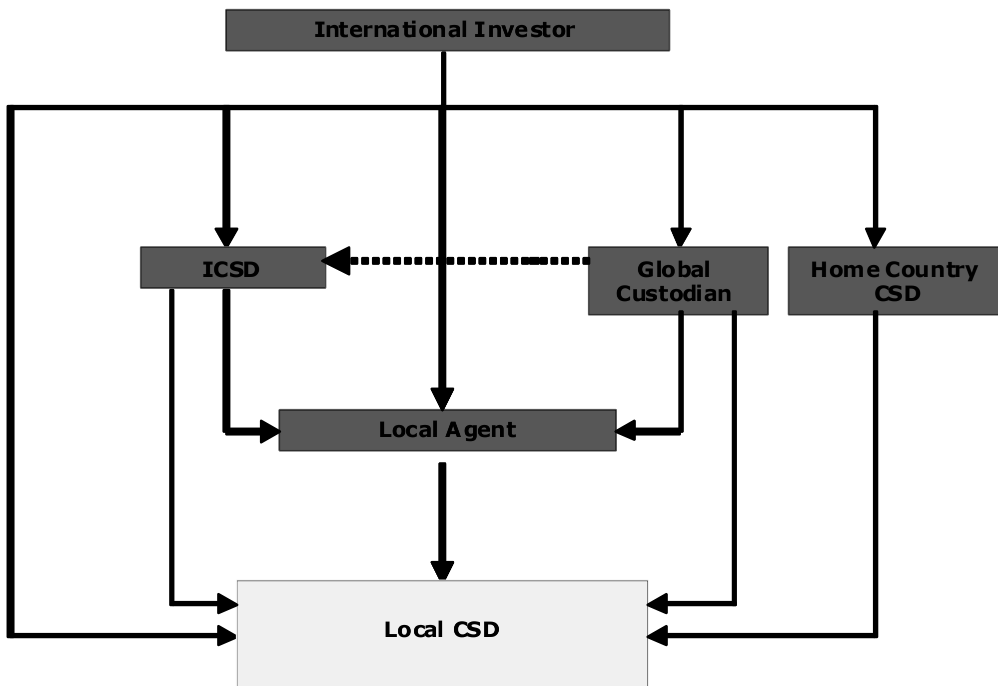
The clearing and the settlement of a cross-border securities transaction raise similar issues, although use of a CCP raises some specific issues.

Channels for cross-border settlement

In order to settle a transaction in a particular security, both counterparties must have access to systems where it is possible to deliver and receive that security. In domestic markets, this is quite simple – the security is issued into a particular CSD and market participants have direct or indirect access to that system for settlement. In a cross-border context, the counterparties are located in different countries and one or both may be located in a different country to the one where the security is issued or is deposited. Thus, the distinctive feature of a cross-border settlement relative to a domestic settlement is that it involves gaining access to a settlement system in another country and/or the interaction of different settlement systems. The complications that arise in this context are an important source of additional cost and risk for investors.

The distinctive feature of settling a cross-border transaction is that it involves gaining access to systems in other countries and/or the interaction of different settlement systems.

Chart 2.2 Channels for Cross-Border Settlement



Settlement of a cross-border transaction can be achieved by…

In settling a cross-border securities transaction, the counterparties have five options (see Chart 2.2 above). These are:

…direct access to a national CSD…

- ***to have direct access to a national CSD*** in the country where the security is issued. Direct access implies participation/membership in the national CSD, which involves signing legal agreements, complying with membership requirements, investing in technological interfaces and access to a payment mechanism. Non-resident institutional traders will often establish local branches or subsidiaries to acquire direct access. Surveys carried out by the BIS in the mid-1990s have indicated that the option of direct access is not widely used.

…use of a local agent…

- ***to avail of the services of a local agent,*** which is normally a financial institution with membership of the national CSD in the country where the security is issued. This is the most common option used for cross-border settlement of equities transactions. For bonds, ICSDs are more extensively used in cross-border settlement. The local agent offers the non-resident a full range of settlement, banking and custody services, as well as services for tax purposes, processing of corporate actions etc. The range of services provided by the local agent is determined on a contractual basis and will normally involve substantial communication with the non-resident investor relating to the settlement process. Local agents with a sufficiently large customer base may even settle trades between customers internally. Local agents can also offer this service to CSDs or ICSDs (so-called indirect links).

- ***to use ICSDs,*** which were originally established to settle for the Eurobond market but have broadened their range of activities substantially over time.[11] ICSDs still operate mainly in the settlement of internationally-traded fixed income instruments but offer a single access point to national markets via links to many national CSDs. These links are either direct or through local agents. The ICSDs have a broad customer base made up of all the main players in these cross-border markets, which enables transactions to be settled between them internally within the ICSDs. This facility is enhanced by the provision of intra-day securities lending, which facilitates the settlement of back-to-back trades without the additional costs associated with pre-positioning securities or accepting the delayed availability of securities.[12]

…use of an ICSD…

- ***to use a global custodian***, which also provides customers with a single access point to national CSDs in various countries via a network of sub-custodians in the countries concerned. These sub-custodians can be local branches or subsidiaries of the global custodian or can be local agents. Use of global custodians is a favoured option among non-resident traders in securities (particularly for equity trades where the ICSDs are less active) because like ICSDs they (i) eliminate the costs of maintaining multiple access to local agents; (ii) can offer lower overall costs of settlement by exploiting economies of scale - particularly by spreading fixed costs (e.g. technology investments) over a very large number of settlement transactions; and (iii) they can offer a wide range of services to customers at low cost by exploiting economies of scope. Global custodians and ICSDs now have similar functions. Moreover, global custodians often maintain accounts with an ICSD.

…use of a global custodian …

- ***to use a bilateral link between CSDs,*** which is the most recently available but probably the least used option by non-residents. Links between CSDs offer advantages by reducing the number of entities involved in the settlement process and by allowing investors to more easily and cheaply meet any collateral requirements. A number of CSD-to-CSD links have now been established in the EU, but most of these offer only "free-of-payment" settlement. Securities are transferred across the link, but the corresponding payment is made separately through an unconnected payment system. Other

…or by using a bilateral link between national CSDs.

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[11] The ICSDs were established in the late 1960s to address the logistical problems created by the need to settle physical bond certificates across borders. At the time, physical delivery frequently required several days and there was a high incidence of failed trades. The main innovation of the ICSDs was the immobilisation of physical securities in a centralised custodial account and introduction of book-entry registration of transfers in place of the physical movement of certificates. Another innovation was the concept of fungibility, whereby account holders in the ICSD could be credited with a certain amount of securities on deposit in the centralised custodial account without specifying the series number of the individual certificates.

[12] Back-to-back trades imply the combination of two securities transactions or more involving the purchase and sale in some form of the same security for settlement on the same day.

problems that have been identified with CSD-CSD links include the fact that banking and cash management services are expensive relative to the services provided by custodians and ICSDs, while the full range of custody services is not always provided.

Risks in cross-border clearing and settlement

The relative complexity of a cross-border transaction is reflected in the overall flow of instructions for its execution

As indicated above, cross-border clearing and settlement almost always involves intermediaries in the transaction chain, implying a significantly greater degree of complexity in the process. The relative complexity of the clearing and settlement of a cross-border securities transaction can be appreciated by reference to Charts 2.3-2.6 These charts are illustrative of the overall flow of instructions in domestic and cross-border transactions involving equities, bonds and exchange-traded derivatives.[13]

Chart 2.3 describes the instruction flows for a stylised domestic equity transaction. In this example, the investor initiates the trade through his usual broker (1). The broker (1) will seek a counterpart broker (2) on the local stock exchange. If the facility is available, the trade may be novated to a CCP. The investor will use his custodian (B) to interact with the national settlement system and the national cash clearing system, typically the central bank. The details of the transaction are as follows:

- Step 1: The transaction begins with the investor wishing to invest in a domestic equity. He contacts his broker (1) with an order to buy.
- Step 2: The broker (1) finds another broker (2) matching his order on the stock exchange.
- Step 3: The matched instruction transferring the equity from Broker (2) to Broker (1) may be sent to the CCP, if available, and is then sent on to the settlement system.
- Step 4: The investor forwards confirmation of the trade to his custodian (B), Broker (1) instructs delivery of equity to (B).
- Step 5: The custodian (B) confirms receipt of equity from Broker (1) and instructs delivery of cash.
- Step 6: The transaction is settled with the payment leg conducted via the central bank.

[13] These charts should not be interpreted as representing standard transactions. The flow of instructions can vary in complexity from one transaction to another. For example, the flow of instructions in a domestic transaction can be made simpler by the availability of straight-through-processing, while the flow of instructions for a cross-border transaction could be even more complex if settlement were to take place via several settlement systems.

Chart 2.3 Instruction flows in Domestic Equities Transaction

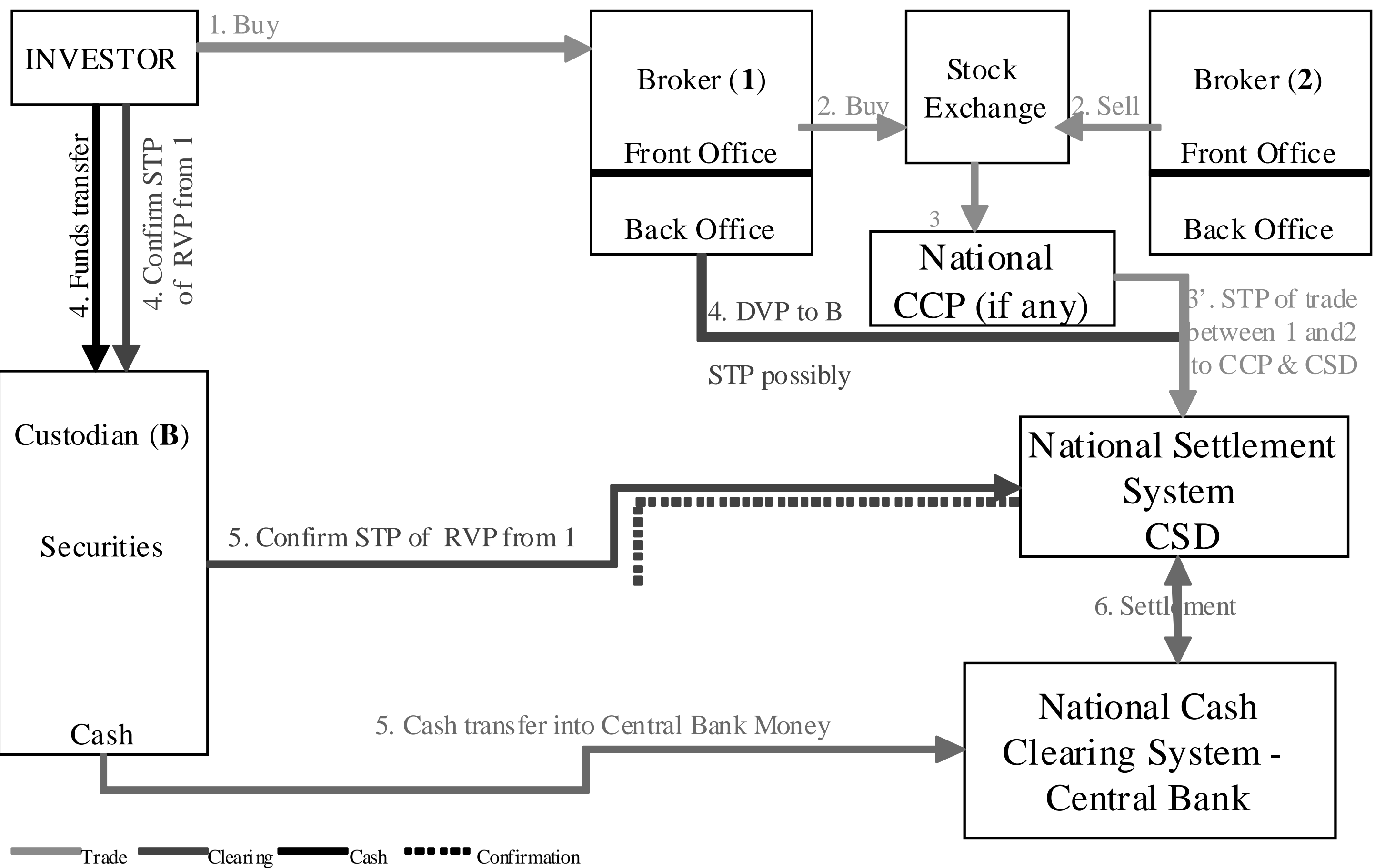
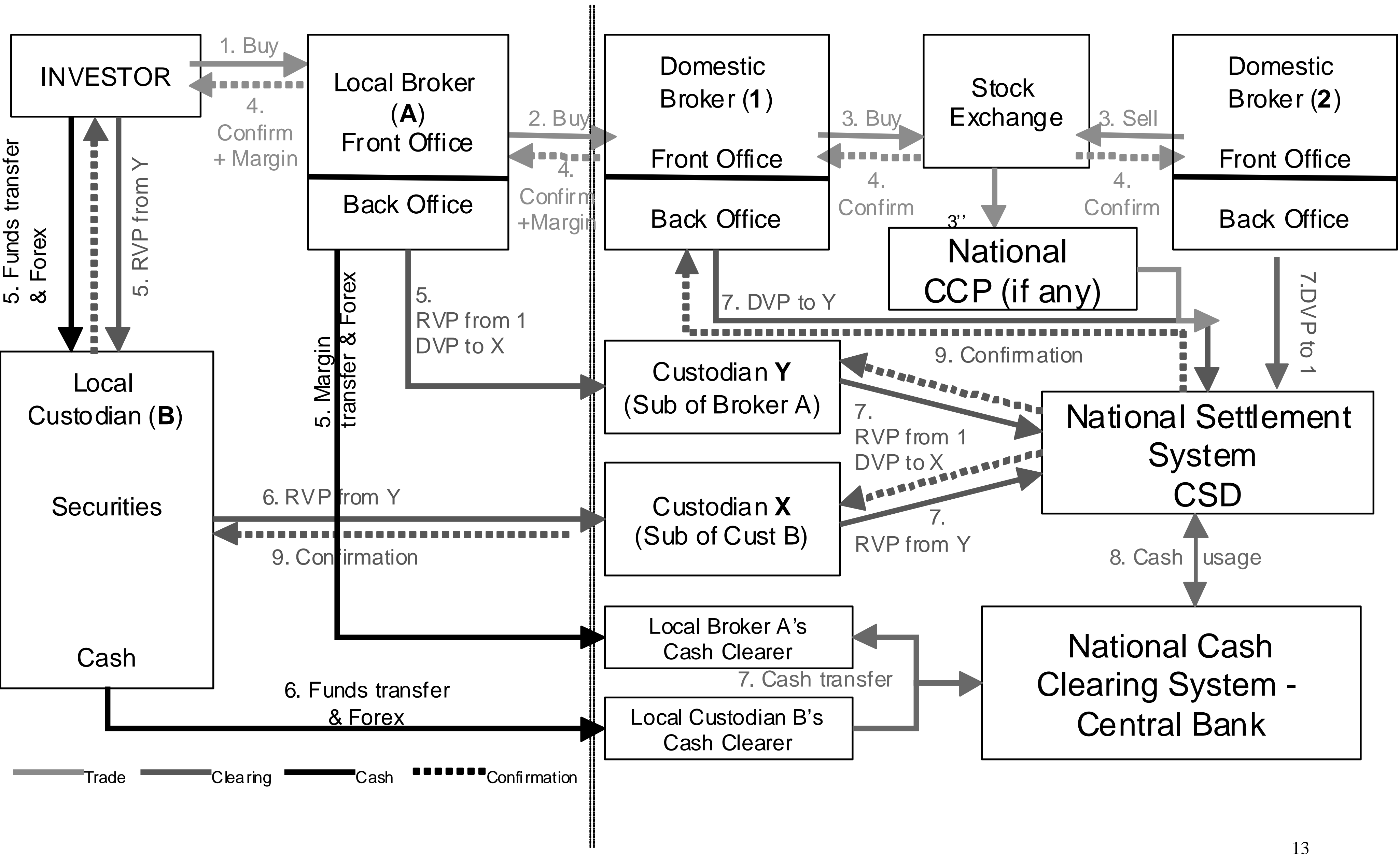


Chart 2.4 describes the instruction flows for a stylised cross-border equity transaction, illustrating its complexity from trading to settlement. In this example, the actors involved in a cross-border equity transaction are the investor who initiates the trade via his usual local broker (A) and settle it through his local custodian (B). In this example all three of the actors are located in the same country. As the equity trade takes place in a foreign country, local broker (A) will use a foreign-country broker (1), who will seek a counterpart broker (2) on the foreign-country stock exchange. If the facility is available, the trade may be novated to a CCP. The local broker (A) will need a foreign-country custodian (Y) and a foreign-country cash clearer. The local custodian (B) will need a foreign country custodian (X) as well and yet another cash clearer. The national central bank of the foreign country may be involved in the cash leg of the trade settlement. The details of the transaction are as follows:

- Step1: The transaction begins with the investor wishing to invest in a foreign equity. He will contact his local broker (A) with an order to buy.
- Step 2: Local broker (A) will forward the investor's order to his corespondent foreign-country broker (1).
- Step 3: The foreign-country broker (1) finds another foreign-country broker (2) matching his order on the foreign-country stock exchange. The matched instruction may be sent to the CCP.
- Step 4: All agents receive and forward confirmation of the investor's order, while the instruction transferring the equity from (2) to (1) is usually sent automatically to the foreign-country CSD.
- Step 5: Local broker (A) instructs his foreign-country custodian (Y) to receive the equity from the foreign-country broker (1) and to deliver it to foreign-country custodian (X); the margin transfer (and foreign exchange conversion) from Broker A to the foreign-country CSD are conducted via the foreign-country cash clearer of local broker (A) and the foreign-country cash clearing system; the investor instructs his local custodian (B) to receive the equity from the foreign-country custodian (Y) of his local broker (A) and transfers the necessary funds for payment to his local custodian (B).
- Step 6: The local custodian (B) instructs its foreign-country custodian (X) to receive the equity from the foreign-country custodian (Y) of the local broker (A). The transfer of the investor's funds for payment is made from the local custodian (B) to its foreign-country cash clearer.
- Step 7: Foreign-country broker (1) receives the equity from foreign-country broker (2); then, foreign-country broker (1) delivers it to foreign-country custodian (Y), who delivers it to foreign-country custodian (X) – all within the settlement system of the foreign-country CSD; the foreign-country cash clearer of local broker (A) transfers funds for payment to the foreign-country CSD, while the foreign-country cash clearer of the local custodian (B) transfers the investors funds to the foreign-country cash-clearer of local broker (A).

Chart 2.4 Instruction flows in Cross-Border Equities Transaction



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- Step 8: The payment leg of the transaction is conducted via the foreign-country central bank.

- Step 9: Confirmation is then sent to all actors and equity transaction is booked (credit/debit) between foreign-country custodian (X) and local custodian (B) and between local custodian (B) and the investor.

Chart 2.5 describes the instruction flows for a stylised Eurobond transaction. In this example, the actors involved are the investor who initiates the trade through his usual broker (1). The broker (1) will seek a counterpart broker (2) to conduct an over-the-counter (OTC) transaction. The transaction is settled in an ICSD, with the payment leg conducted via the investor's cash correspondent and the cash correspondent bank network. The details of the transaction are as follows:

- Step 1: The transaction begins with the investor wishing to invest in a Eurobond. He contacts his broker (1) with an order to buy.

- Step 2: The broker (1) finds another broker (2) matching his order and purchases the Eurobond in an OTC transaction

- Step 3: Broker (1) confirms the terms of the trade with the investor and calls for a margin payment.

- Step 4: Broker (1) sends instructions to the ICSD to receive the Eurobond from Broker (2) and deliver it to the investor. The investor sends instruction to ICSD to receive the Eurobond from Broker (1), while instructing his cash correspondent to transfer the funds to the cash correspondent network. (Broker (2) sends the same instructions in reverse.)

- Step 5: The transaction is settled in the ICSD, with the payment leg conducted via the cash correspondent network.

Chart 2.6 details the instructions flow for a stylised exchange-traded derivatives transaction. The actors in this transaction are (i) the investors, who are the initiators of the process because of their opposite wishes to buy (A) and to sell (B) the same amount of derivatives at the same price; (ii) the executing brokers, one for each Investor, that have joined the Derivative Exchange by applying for the relevant (in terms of financial products traded) membership. They require customers (the Investors) to pledge financial assets in order to secure that any legal obligation will be timely executed; and (iii) the general clearing member who, in this example, is the same for both executing brokers and acts at a superior level of membership in the Exchange. The Derivatives Exchange is a publicly regulated and publicly/privately owned entity whose function is to let supply and demand of a standardized derivative product meet in a orderly fashion under a shared framework of rules and by-laws. The clearinghouse who can be part of the Derivatives Exchange

in a vertically oriented business model or –as in the flow chart- can be a third publicly regulated, publicly/privately owned body, whose function is to grant perfect execution of the contractual obligations resulting from the investor community's activity as vested by their executing brokers. The detailed instruction flow is as follows:

- Step 1: Investor A (B) decides to buy (sell) *n* lots of *I* derivative instrument at *p* price. He communicates the order to his broker. Investor pledges financial assets to his executing broker.

- Step 2: The executing broker enters the Derivatives Exchange and under his own name feeds the bid side (sell side) of the market. The matching of time, price and size allows the orders to become executed.

- Step 3: The executing broker tells his general clearer the details of the transaction (give-up of trades).

- Step 4: The new long (short) position generated is settled at the clearinghouse, which allocates the relevant side of the transaction to the general clearer claiming for it.

- Step 5: The clearinghouse asks the general clearer for the deposit of the initial/variation margins.

- Step 6: The general clearer rebates the relevant initial/variation margin call to the executing broker A (B) who, in turn, has the guarantee of the pledge by investor A (B).

These charts indicate not only the relative complexity of cross-border clearing and settlement but also that the clearing and settlement of cross-border transactions in equities is significantly more complex than for transactions in bonds and derivatives. Focusing on equities, the additional complexity of a cross-border transaction as represented in these charts is reflected in:

(i) the need for as many as 11 intermediaries for a cross-border equity transaction, compared to only 5 for a corresponding domestic transaction;

(ii) the fact that a single cross-border transaction requires a minimum of 14 instructions between parties (i.e. buy orders, securities and cash movements) and as many confirmation messages; (iii) the need for investor's cash to be exchanged in the local currency and converted into the country's national central bank money in the case of a cross-border transaction involving different currencies; and

(iv) the extent to which different systems and references impede a satisfactory level of straight-through processing for cross-border transactions.

Chart 2.5: Instruction flows in Eurobond transaction

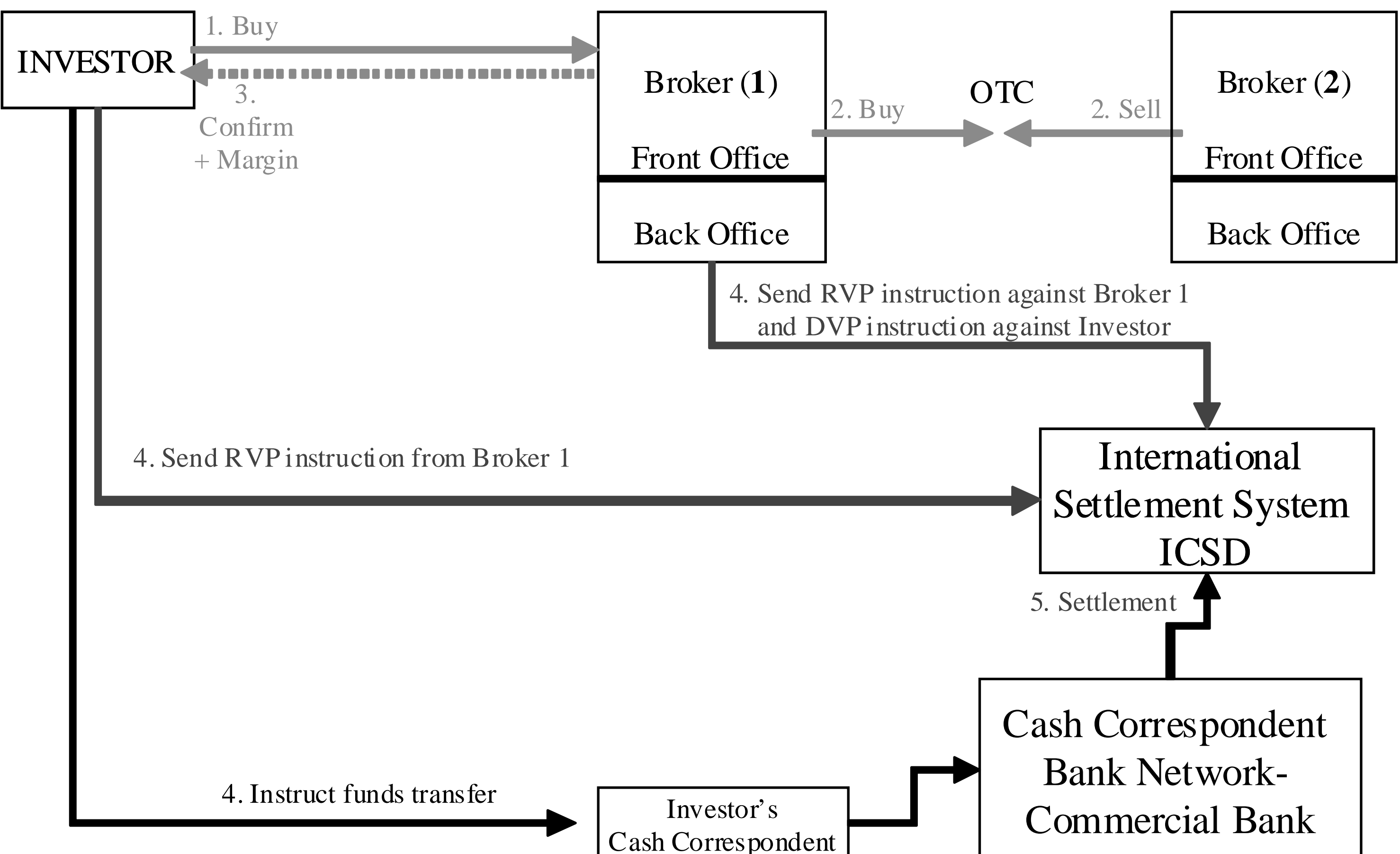
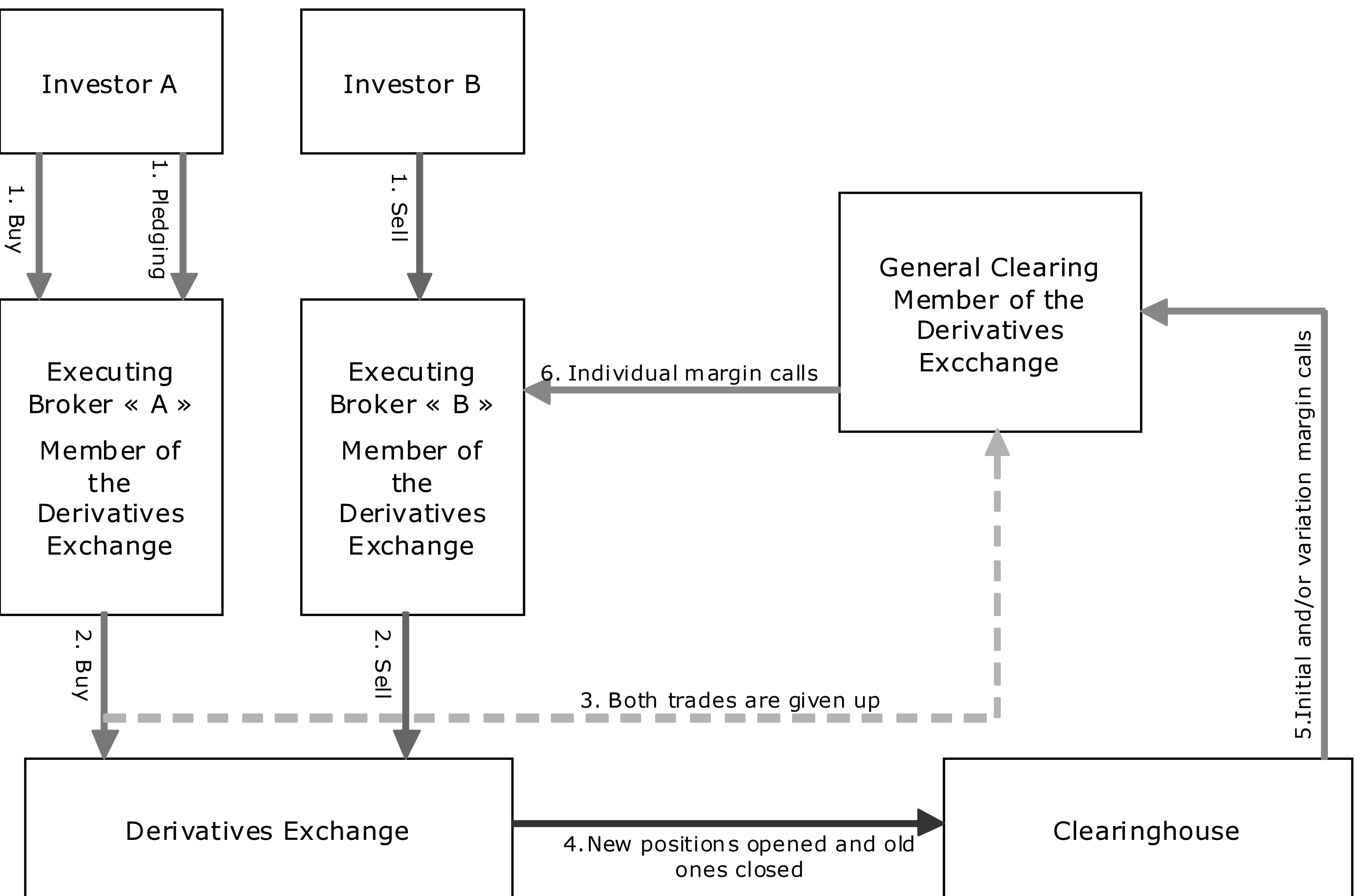


Chart 2.6 Instruction flows for exchange-traded derivatives



The greater complexity of cross-border transactions, and equity-based transactions in particular, means that their settlement (and clearing to a lesser extent) involves credit risk beyond that normally associated with a domestic settlement. In addition, the relative complexity of cross-border trades involves a higher level of operational risk.

While a cross-border transaction involves the credit risk normally associated with a domestic transaction...

Credit risk that is equally associated with clearing and settlement of both domestic and cross-border trades includes:

- ***principal risk*** which is the possibility that either counterparty to the trade will fail to meet his obligations, which can be addressed by moving to a DVP system in the CSD concerned

- ***replacement risk*** which is the possibility that either counterparty will fail to meet his obligations on the due settlement date and leaving the other counterparty with the cost of replacing, at current market prices, the original transaction; this risk can be addressed by proper internal risk management when cleared through a clearinghouse with collateralised exposure or within the CSD;

- ***liquidity risk*** which is the possibility that either counterparty will not settle an obligation for the full value on the due date but at some unspecified date thereafter; this risk can also be addressed by proper internal risk management when cleared through a clearinghouse with collateralised exposure or within the CSD.

- ***cash deposit risk**,* which can be considered as a specific form of liquidity risk arising from the need to hold cash balances with an intermediary for settling the security transactions.

… these risks are increased by the need to use intermediaries.

The sources of credit risk that are more specifically associated with cross-border securities transactions include:

- ***custody risk***, which is the possible loss of securities held in custody because of insolvency, fraud or negligence of the custodian or sub-custodian. As is clear from the channels described above, there is greater reliance on custodians, or multiple custodians, for cross-border settlement. Therefore, this category of risk is increased beyond the level for domestic settlement. The key response to this risk is segregation of customer securities from the "owned" securities of the custodian. The availability of operational links between national CSDs would also address this risk by reducing the need to use custodians.

- ***legal risk***, which is the possibility of an unexpected application of a law/regulation or because a contract cannot be enforced. Cross-border settlement involves multiple legal jurisdictions, such that this risk is increased.

- ***foreign exchange risk***, which arises from possible movements in exchange, rates between the trade date and the settlement date. In addition, liquidity risk can be increased in a multi-currency environment.

While much of the additional risk attached to cross-border settlement arises from the need to use more intermediaries, the problem is not clear-cut. The use of a local agent will certainly create custody risk and the use of multiple local agents or a global custodian (with sub-custodians) will increase that risk. However, the single access point provided by the global custodian or ICSD will reduce operational risk, and they can provide other services which help in cash management and reduce money settlement uncertainty relating to fails. Moreover, ICSDs and global custodians also provide ancillary services that facilitate securities and cash management and often lend securities to participants to ease liquidity and replacement risk.

On the other hand, the use of intermediaries can serve to reduce operational risk.

III. Conclusion

The clearing and settlement processes are essential features of a smoothly functioning securities market. Clearing and settlement can be achieved in different ways and can involve several intermediaries in addition to the buyer and seller. The complexity of a securities transaction, i.e. the complexity of the clearing and settlement processes, is directly related to the number of actors involved. In this context, it is worth noting that a cross-border securities transaction normally involves a greater number of actors than a domestic transaction. The increased risks that are associated with cross-border clearing and settlement imply additional costs to the ultimate investor. Clearly, the potential for additional risk and cost in cross-border transactions rises with the number of different clearing and settlement systems that must to be used. A summary of the current institutional arrangements for clearing and settlement in the European Union is provided in the next section, clearly demonstrating the extent of fragmentation facing the pan-EU investor. The costs associated with that fragmentation are then considered in Section 4.

In sum, the complexity of the clearing and settlement processes is directly related to the number of actors involved and a cross-border securities transaction normally involves a greater number of actors than a domestic transaction.

Section 3: Overview of EU clearing and settlement infrastructure

I. Evolution of the EU clearing and settlement infrastructure.

The existing infrastructure for the provision of clearing and settlement services in the European Union is the product of a fragmented securities market. Historically, the pattern of European securities trading has followed national lines, a pattern that was reinforced by the existence of different currencies (for a long time accompanied by exchange controls) and relatively basic technology. The result has been the emergence of an efficient infrastructure for securities markets in each Member State, often comprising the full or partial integration of trading, clearing, settlement and depository functionalities.

A history of national-based securities trading has resulted in a fragmented EU infrastructure for clearing and settlement…

The emergence of national-based infrastructures for clearing and settlement has resulted in a wide variation in the procedures and requirements associated with the provision of these services across the Union. This variation reflects not only specific market practices in each Member State but also more fundamental differences in national frameworks for the regulatory, legal and fiscal treatment of securities. The extent of fragmentation in the EU clearing and settlement infrastructure has been exposed by the increased demand for cross-border trading that is an inevitable consequence of financial integration. As discussed in the previous section, the additional cost and risk associated with this fragmentation represents a significant limitation on the scope for cross-border securities trading in the European Union. By extension, it also represents an important limitation on exploiting the economic benefits of the Internal Market and the euro.

…which is inefficient in the context of increased demand for cross-border trading within a progressively integrated EU financial system.

The evolution of the EU clearing and settlement infrastructure has also differed across the main securities markets. In the fixed-income market, the expansion in issuance of Eurobonds since the late 1960s resulted in the creation of the two international central securities depositories (ICSDs) – Euroclear Bank and Cedelbank, now Clearstream International. Indeed, the Eurobond market itself can be interpreted as a means to offer efficient trading in the presence of inefficiently separated markets. The ICSDs were established specifically to provide settlement services to this international market. Over time, the range of products that are processed by ICSDs has expanded to cover most types of bonds and to a lesser extent other securities such as equities.

The evolution of the EU clearing and settlement infrastructure has also differed across the main securities markets, with cross-border arrangements most developed for the bond markets.

The capacity of the ICSDs to provide international clearance and settlement services for the bond market has been helped by the comparative homogeneity in fixed-income securities and the extent to which they have been commoditised. Equities are more heterogeneous instruments and more complex to manage particularly with respect to corporate actions and insofar as they require continuous communication between the company that has issued the equity and its holder. In

Clearing and settlement of cross-border equity-transactions is particularly challenging.

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consequence, cross-border clearing and settlement of equities - in the presence of varying technical requirements, market practices, fiscal procedures and legal environments among the Member States – is particularly challenging.

The market structures for exchange-traded derivatives have evolved very differently from those for the fixed-income and equity markets. Unlike securities, exchange-traded derivatives are instruments that are based on a bilateral contract - open or closed – between two market participants. The execution of derivatives trades typically takes place via direct members of exchanges, and the clearinghouse acts as central counterparty for all such trades. While clearing and settlement are simply post-execution stages in a securities transaction, clearing is the core process for the creation of an exchange-traded derivative. As the clearing process is integral to the very existence of a market for exchange-traded derivatives, the CCP plays a role that is analogous to a CSD in a securities market.

The market structures for exchange-traded derivatives have evolved very differently from those for the fixed-income and equity markets.

II. Current institutional arrangements for EU clearing and settlement

In considering the problems created by fragmentation in the EU clearing and settlement infrastructure, a first step is to review current institutional arrangements for the provision of these services.[14] The following overview - based largely on the ECB's Blue Book (2001)[15] – provides a concise description of these arrangements at the national and international level, focusing also on the existence of any cross-border links between institutions. A summary table is provided at the end of the section.

Fragmentation in the EU clearing and settlement infrastructure is evident from a review of current institutional arrangements.

Belgium

In September 2000, the Belgium, French and Dutch Exchanges merged to form Euronext. Through these three Exchanges Euronext manages both regulated and unregulated markets comprising a cash market for financial instruments, a derivatives market and a commodity market. The integrated Euronext market will cater for small to medium-sized companies, blue-chips and New Economy companies. Trade will be conducted on a single trading platform, in conformity with unified Rules.

Trading in Belgium

Clearnet is the central counterparty performing clearing services for all transactions executed on Euronext. Clearnet is a credit institution under French law and is wholly-owned by Euronext (Euroclear will acquire 20% of the capital in the near future). Its head office is in Paris and it has branches in Brussels and Amsterdam. The Belgian branch currently

Clearing in Belgium

[14] The section describes the arrangements in each country for trading, clearing (including any central counterparty arrangements) and settlement of securities and derivatives. Custody and depositary functions are not examined.

[15] In general therefore, the text describes the situation as it stood in the Summer of 2001, although more up-to-date information has been included where possible.

operates on the technical platform used by the Brussels Clearing House, but is migrating to a common platform that will be used in all three Member States. Membership rules and risk management procedures have also been harmonised across the three Member States.

There are three securities settlement systems, Euroclear Bank, the CIK (Caisse Interprofessionelle de Dépôts et de Virement de Titres s.a.) and the settlement system of the National Bank of Belgium. Equity and private sector-debt transactions on the stock exchange are settled through BXS-CIK, while public-sector debt transactions are settled through the settlement system of the National Bank. The CIK will transfer its settlement activity customer book to Euroclear in the near future. At present, CIK has links with several foreign central depositories. These include Euroclear-France, Necigef (the Netherlands), SEGA (Switzerland) and Clearstream Bank Frankfurt (CBF) and Euroclear Bank. The National Bank system offers clearing and settlement of fixed-income securities (public sector debt securities) in a dematerialised environment only.

Settlement in Belgium

Denmark

Securities trading in Denmark takes place in the SAXESS joint trading system of the NOREX alliance between the Copenhagen and Stockholm exchanges. The Copenhagen exchange (CSE) began the trading of listed equities in SAXESS in June 1999 and the trading of bonds in October 2000. Trading of futures and options has been transferred to the fully-automated Swedish derivatives system.

Trading in Denmark

There is no CCP for the Danish securities markets. The Danish Securities Centre (Værdipapircentralen or VP) is the single market institution in the Danish market, which undertakes the clearance of securities transactions. FUTOP clears all derivatives contracts that are registered on clearing accounts, exchange-traded transactions and off-exchange transactions.

Clearing in Denmark

The VP also handles the settlement of securities transactions in the Danish market. The VP has links with the Swedish CSD (VPC), Euroclear and Clearstream Bank Luxembourg (CBL). FUTOP offers the settlement of transactions in futures and options even though trading has been transferred to the Swedish derivatives system.

Settlement in Denmark

Germany

There are eight stock exchanges, with the highest turnover (about 90%) generated on Frankfurt exchange (FWB) operated by the Deutsche Börse AG. Deutsche Börse runs the electronic Xetra platform, which is also used by the Vienna and Irish exchanges. The other regional exchanges are in Berlin, Bremen, Dusseldorf, Hamburg, Hannover, Munich and Stuttgart. Options and futures are traded on the Eurex exchange, which is operated by Eurex AG, and is a joint venture between Deutsche Börse AG and the Swiss national exchange. Eurex has co-operation arrangements with the Helsinki Exchanges Group (HEX).

Trading in Germany

Currently, there is no CCP for trades executed on the German stock exchanges. Clearstream Bank Frankfurt (CBF) provides clearance for all securities transactions on German exchanges and OTC trades. Derivatives trades - as well as EurexBonds and Euro-Repo trades - are cleared through EurexClearing AG, a fully owned subsidiary of the Eurex exchange. EurexClearing acts as central counterparty and allows cross-border and cross-product netting of positions. It plans to extend its activities to other segments of the securities markets. The trading and clearing systems are integrated, and EurexClearing has automated links for securities settlement with the CBF and Euroclear (the choice of the settlement location is left to the single clearing members). For settlement of derivatives trades, there are links to SIS (Switzerland) and to CBF.

Clearing in Germany

CBF, which is also the national CSD, provides securities settlement for all trades on German exchanges. CBF is a wholly owned subsidiary of Clearstream International SA, which in turn is owned 50% by Deutsche Börse AG and 50% by the shareholders of Cedel International SA. Further details on Clearstream International are provided below.

Settlement in Germany

Greece

The Hellenic Exchanges S.A. group (HELEX) is a holding company with a dominant position in the Greek capital markets. The main components of the Group are the Athens Stock Exchange SA (ASE), the Athens Derivatives Exchange (ADEX), Thessaloniki Stock Exchange Centre, the Athens Derivatives Exchange Clearing House (ADECH) and The Central Securities Depository SA (CSD SA). HELEX is controlled by the Hellenic Government, which has a 40.9% share of the capital. The HDAT is an electronic secondary market for Greek government securities, which is operated and managed by the Bank of Greece.

Trading in Greece

There is no central clearinghouse for securities markets in Greece. ADECH provides central counterparty clearing services (and guarantees settlement) of derivatives trades on ADEX. ASE has a 35% share of the ownership of ADECH.

Clearing in Greece

There are two securities settlement systems, CSD SA for private equities and bonds, and BOGS for all Greek government debt instruments. CSD SA is the national CSD and provides settlement of all transactions relating to registered and bearer shares listed on the ASE. The ASE has reduced its previously full ownership of CSD SA to some 38.5%. CSD SA is not linked with any other settlement/depository organisation but proposes to link with other central depositories via the ECSDA-sponsored Eurolinks system. BOGS is managed by the Bank of Greece and has no direct links with foreign settlement systems or CSDs.

Settlement in Greece

Spain

Spain has four stock exchanges, in Madrid, Barcelona, Bilbao and Valencia. The four exchanges jointly own the Sociedad de Bolsas, which is responsible for the technical management of their common trading platform, i.e. the Spanish Stock Markets Interconnection System.

Trading in Spain

Government securities and debt instruments issued by other public administrations and entities are traded on the Public Debt book-entry market (CADE), which is managed by the Banco de España. Corporate debt instruments are traded in the AIAF fixed-income market, run by the Spanish securities dealers associations. The future and options markets are managed by the MEFF (Mercado Español de Futuros Financieros).

Clearing in Spain

There is no clearing house/central counterparty other than MEFF, which acts as CCP for the derivative markets. MEFF is an electronic system, integrating the trading, clearing and settlement of derivatives. The Spanish settlement systems are responsible for clearance and netting the cash positions in the markets they serve, but they do not assume settlement risk.

Settlement in Spain

Spain has two main settlement systems, i.e. the SCLV (Servicio de Compensacion, y Liquidacion de Valores) and the CADE (Caja General de Dépositos). In addition, there are three regional systems with limited scope (SCL Barcelona, SCL Bilbao, and SCL Valencia). SCLV is the settlement system for all listed securities traded on the stock exchanges. SCLV is 40%-owned by the four Spanish stock exchanges. CADE acts as central depository and provides settlement services for the trades in public and private fixed income securities. SCLV and CADE have established cross-border links with settlement systems in Italy (Monte Titoli), the Netherlands (Necigef) and France (Euroclear France). CADE has also a link with CBF. Consolidation in the securities settlement system is foreseen with a future merger of CADE and SCLV. In June 2000, the two companies established a joint-venture company named IBERCLEAR, which establishes the basis for a future single Spanish CSD.

Consolidation of Spanish infrastructure is underway.

In June 2001, the main institutions of the Spanish securities markets (i.e. the governing companies of the four stock exchanges, MEFF, IBERCLEAR and FC&M, and the commodities derivative market) agreed to form the Bolsas Y Mercados Españoles, Sociedad Holding de Mercados y Sistemas Financierors S.A. This new entity will be responsible for strategic co-ordination of the Spanish markets.

France

Trading in France

There are four regulated markets: (i) the Bourse de Paris; (ii) the Nouveau Marché which is open to high-growth companies; (iii) Matif which trades interest-rate futures and options; and (iv) Monep which trades futures and options on equities and equity indexes. Euronext Paris manages all of these markets as well as the unregulated Marché Libre. In September 2000, ParisBourse SA merged with the Amsterdam and Brussels exchanges to form Euronext, as a single integrated market, comprising a cash market for equities and bonds, a derivatives market and a commodity market. The integrated Euronext market caters for small to medium-sized companies, blue-chips and New Economy companies. Trade will be conducted on one technical platform, with the former national exchanges becoming local entry points with unified rules of access. This stage has already been reached for the cash markets.

Clearing in France

Since May 1999, Clearnet has been the single clearinghouse and central counterparty for all of the above markets, and clears OTC cash and repo

trades in French and German government securities. Clearnet became the single clearinghouse for Euronext, when it merged with clearinghouses in the Netherlands (AEX) and Belgium (BXS) in February 2001.

Settlement in France

Euroclear France, formerly Sicovam, is the national CSD and operates the country's settlement system – Relit de Grande Vitesse (RGV) which became the single platform for settlement of all securities transactions in June 2001. Euroclear France, which is a wholly-owned subsidiary of Euroclear Bank, has established links with foreign CSDs and ICSDs. These are CBF, OeKB in Austria, the settlement system of the National Bank of Belgium, Euroclear and the CIK in Belgium, CADE and SCLV in Spain, APK in Finland, Monte Titoli in Italy, Necigef in the Netherlands and CBL in Luxembourg.

Ireland

Trading in Ireland

The Irish Stock Exchange provides the main national market for Irish equities and government bonds. The Irish Stock Exchange operates the Official List, the Developing Companies Market, the Exploration Securities Market and the ITEQ Market. The Official List is the main market for listed companies and Irish Government bonds. The Developing Companies Market is for new and developing companies. The Exploration Securities Market is confined to exploration and mineral companies. The ITEQ Market is the Technology Market of the Irish Stock Exchange.

Clearing and settlement of Irish securities.

There is currently no central counterparty for transactions in Irish equities or bonds. Clearance is undertaken by the relevant settlement system. Transactions in Irish equities and corporate bonds have been settled in CREST since its launch in 1996. Euroclear Bank has provided settlement services for Irish government bonds since the closure of the Central Bank of Ireland Securities Settlement Office (CBISSO) in December 2000.

Italy

Trading in Italy

The Italian Stock Exchange is managed by Borsa Italiana S.p.A and comprises the Mercato Telematico Azionario (MTA) for stock, convertible bonds and warrants, the Mercato Ristretto, for stock, bonds and warrants not officially listed, the Nuovo Mercato (NM) a market for high growth companies, a market for Covered Warrant (MCW), a market for equity derivatives (IDEM), the Italian futures market (MIF), the retail government and corporate bonds market (MOT) and the market for traditional options on equities (MPR). In 2000, the Italian Stock Exchange introduced EuroMOT, a market designed for Eurobonds, foreign bonds and asset-backed securities. The wholesale screen-based market for government securities (MTS) is managed by MTS S.p.A. A guarantee fund exists to secure the performance of securities transactions dealt on MTA and NM. The Cassa di Compensazione e Garanzia (CCG) manages this fund but does not act as central counterparty.

Clearance and netting is provided via the LDT procedure, which is managed and owned by the Banca d'Italia. The CCG acts as a clearinghouse for the derivatives exchanges. In the context of an alliance with the Spanish Futures and Options Exchange (MEFF) and the Matif (France), there is a link between the CCG and Matif.

Clearing in Italy

Settlement services are also provided via the LDT procedure, with settlement across the books of the national CSD, Monte Titoli, against central bank money. OTC transactions and monetary policy operations are settled directly by Monte Titoli via Express, a system managed and owned by Monte Titoli. Monte Titoli has established links with foreign CSDs and ICSDs. These are CBF, OeKB in Austria, Euroclear and CIK in Belgium, CADE and SCLV in Spain, Necigef in the Netherlands, CBL in Luxembourg, Euroclear France, SIS in Switzerland and the DTCC in US. The CCG also manages a separate guarantee fund, which is designed to ensure timely settlement of transactions in listed equities, convertible bonds, warrant and fund units.

Settlement in Italy

Luxembourg

The Luxembourg stock exchange provides for trading in bonds, equities and participations in undertakings for collective investments (UCIs). There is no independent clearinghouse in Luxembourg. Clearance and settlement of securities transactions is performed CBL, which is the national CSD. CBL is part of Clearstream International (see below for details). CBL is substantially integrated with CBF in Germany and the two CSDs aim to migrate all of their operations onto a single IT platform by the end of 2002. CBL is authorised to perform a complete range of banking services, but these are limited (by CBL's by-laws) to facilitating its core clearance and settlement business. A wide selection of securities transactions (e.g. bonds, Eurobonds, convertibles, equities, money-market instruments etc.) is processed by CBL, which operates a multi-currency system. A bridge arrangement exists between CBL and Euroclear Bank, which allows transactions to be settled between their respective customers. CBL is also designated by the Banque Centrale de Luxembourg to act as the CSD for handling securities used as collateral in ESCB credit operations.

Trading, clearing and settlement in Luxembourg

The Netherlands

In September 2000, the Amsterdam exchange (AEX) merged with the Brussels and Paris exchanges to form Euronext as a single integrated market, comprising a cash market for equities and bonds, a derivatives market and a commodity market. The integrated Euronext market caters for small to medium-sized companies, blue-chips and New Economy companies. Trade will eventually be conducted on one technical platform, with the former national exchanges becoming local entry points with unified rules of access. This stage has already been reached for the cash markets.

Trading in the Netherlands

Clearnet has been the CCP for Euronext Amsterdam since February 2001. Clearnet is wholly-owned by Euronext and has branches in Brussels and Amsterdam. The Dutch branch currently operates on the

Clearing in the Netherlands

technical platforms used by AEX, but is migrating to a common platform which will be used in all three Member States. Membership rules and risk management procedures have been harmonised across the three Member States.

Settlement in the Netherlands

Euronext transactions will be settled at the national level until end-2003 at the latest. Settlement services are provided by Euronext Amsterdam Stock Clearing and Necigef, the latter of which is the national CSD and provides for settlement of off-exchange transactions. Necigef is also part of Euronext Amsterdam. Necigef is linked to CSDs in Belgium, France, Germany, England, Finland, Austria, Luxembourg, Italy, Spain, and Switzerland.

Austria

Trading in Austria

Austria's only stock and derivatives exchange is located in Vienna and is operated by Wiener Börse AG, which has been a privately owned company since the Government sold its 50% shareholding in June 1999. Wiener Börse provides for trading in equities (including new economy companies), bonds, warrants, other securities, futures and options. There is also an OTC market. Wiener Börse AG has established a strategic partnership with Deutsche Börse AG. The two exchanges are joint owners of the New Europe Exchange (NEWEX), which is also located in Vienna and deals exclusively with central and Eastern Europe.

Clearing in Austria

There is no independent clearinghouse for the equities market. Post-trade and pre-settlement clearance services are performed by the national CSD (Oesterreichische Kontrollbank AG). The derivatives market of Wiener Börse (OTOB) provides clearing for all standardised derivative products, using a real-time clearing system (OM Secure). The exchange acts as counterparty to all derivatives transactions and so guarantees fulfilment of those transactions. CBF performs clearance and settlement of transactions on the NEWEX exchange.

Settlement in Austria

The national CSD is operated by the Oesterreichische Kontrollbank AG and settles both OTC and exchange transactions. The OeKB is a private entity. The CSD maintains links with several foreign CSDs for all types of securities. These are CBF in Germany, CBL in Luxembourg, Necigef in the Netherlands, SIS in Switzerland, Euroclear in Belgium and France, Monte Titoli in Italy and Keler in Hungary. The CSD also acts as a depository for Euroclear in respect of all Austrian bonds. Settlement of the derivatives transactions are performed in Oesterreichische Kontrollbank AG for EURO denominated products and in Euroclear for USD denominated derivatives.

Portugal

Trading in Portugal

The Lisbon and Oporto Stock Exchange (BVLP) is a limited liability company consisting of the entities previously known as the Lisbon Stock Exchange Association (ABVL) and the Oporto Derivatives Exchange Association (ABDP). Recently, the Lisbon exchange signed a memorandum of understanding with Euronext, which is seen as

indicating a formal merger. The BLVP also operates an electronic trading system for futures and options trading.

Clearing and settlement in Portugal

Clearance and settlement services are provided by Interbolsa, the national CSD owned by the BVLP. Besides Interbolsa, there is an SSS called SITEME, owned by the Banco de Portugal and managed by the Markets and Reserve Management Department. It is used by the Banco de Portugal to settle its own operations and operations of the Treasury and other credit institutions. Currently, Portuguese central bank paper and commercial paper are the only two types of securities deposited in SITEME. In the future, however, tradable money market securities may also be deposited with this CSD.

Finland

Trading in Finland

Helsinki Securities and Derivatives Exchange, Clearing House Ltd. (Helsinki Exchanges) is a regulated marketplace that deals in equities, bonds, options, futures and other derivative instruments. Most bond trading and all money market trading in Finland takes place over the counter. Securities trading, clearing and registration and the depositing and custody of listed securities are concentrated among the various subsidiaries of the HEX Group, which has been operating in its current form since April 1999. The HEX Group is planning to obtain a listing on the Helsinki Exchanges. For this reason, it is reorganising its structure to focus on five business areas: corporate services, trading, custodial services, securities services and internet-based services.

Clearing in Finland

There are no independent clearing houses in Finland. Arvopaperikeskus (APK), which is the Finnish CSD and part of the HEX group, provides participants with centralised services related to the handling, ownership, clearance and settlement of securities registered in book-entry form. All stock, warrant and bond trades on the Helsinki Exchanges are cleared centrally by APK.

Settlement in Finland

APK is the only CSD holding such a licence in Finland, as well as the only SSS operator. For historical reasons, the SSS of APK consists of two technically separate sub-systems, namely the RM system for settling money market instruments and most debt securities and the OM system for settling shares, other equity-related securities and some debt securities. APK has a link with CBF and Euroclear France.

Sweden

Trading in Sweden

The OM Stockholm Exchange was established by the merger by the OM derivatives exchange and the Stockholm Stock Exchange in 1998. The OM Stockholm Exchange has one trading system (SAXESS) for trading equities and derivatives. The majority of trading in fixed-income instruments is done in a professional OTC telephone market with trading reported to the OM Fixed Income Exchange at the end of the day. In addition, there are two other authorised marketplaces offering equities trading in small companies, Aktie Torget AB and SBI Marknadsplats AB.

The Om Stockholm Exchange is the clearing organisation, which acts as central counterparty in the transactions that are cleared. Clearing includes both derivatives traded on the exchange and derivatives traded outside the exchange.

Clearing in Sweden

VärdePappersCentralen (VPC) is the only organisation in Sweden operating an SSS – the VPC system – and providing the services of a CSD. As of September 2000, VPC had links to the Danish system VP for settlement of transactions in government bonds.

Settlement in Sweden

United Kingdom

There are nine regulated markets (under the ISD) in the UK. The London Stock Exchange (LSE) operates the Domestic Equity Market, the European Equity Market, the Gilt Edged and Sterling Bond Market and the Alternative Investment Market (AIM). LIFFE operates the London International Financial Futures and Options Exchange with derivatives contracts on UK and foreign government bonds, short-term interest rates, equity indices and individual equities. Liffe has recently announced that it is to merge with Euronext. Other markets are OMLX (operated by OM London), which primarily trades in Swedish equity derivatives; virt-X, a pan-European market in blue chip equities operated in conjunction with SWX; Coredeal, primarily a eurobond market; and Jiway (also owned by OM group) for smaller scale transactions in US and European equities. Fixed income trading is primarily OTC, though a number of intermediaries offer interdealer execution platforms. London Metal Exchange (LME) and International Petroleum Exchange (IPE) also offer trading in standardised derivatives contracts.

Trading in the United Kingdom

LCH is the principal clearinghouse in the UK, providing central counterparty services for LSE, LIFFE, LME and IPE. LCH also provides two OTC services: Repoclear, for clearing of cash and repo trades in a number of European government and international bonds, and German jumbo pfandbriefe; and Swapclear, for interbank and interest rate swaps. LCH is 75% owned by its members and 25% by LIFFE, LME and IPE and operates on a non profit-making basis. OMLX and Jiway operate in-house clearing and CCP facilities. For Coredeal a central counterparty, TradeGo, assumes counterparty risk.

Clearing in the United Kingdom

CRESTCo, a private company owned by the users of CREST, operates two settlement systems in the UK: CREST and CMO. CREST settles transactions in UK and Irish equities, corporate bonds and UK government debt. Money market instruments are settled in CMO, but work is underway to incorporate them into CREST. CREST has links to Euroclear in Belgium, CBF and SIS in Switzerland (through which it links to all other European markets). Participants in virt-x can choose to settle transactions in any of CREST, Euroclear or SIS. Jiway offers internal settlement through accounts in its own books, or external settlement through designated settlement systems. Eurobond transactions on Coredeal settle in Clearstream Internationalor, Euroclear, and US Treasury transactions in Fedwire in the US.

Settlement in the United Kingdom

Clearstream International and Euroclear Bank

Clearstream International is an international CSD and provides clearance and settlement of domestic and cross-border securities transactions, mainly in debt securities (i.e. Eurobonds, global bonds, Brady bonds, foreign bonds, US foreign-targeted securities, government bonds, corporate bonds, short-to medium term instruments etc.) Clearstream International was formed by the merger of Cedel International (the Luxembourg-based ICSD) and the German CSD Deutsche Börse Clearing in 2000. Clearstream International is owned 50% by Deutsche Börse AG and 50% by the shareholders of Cedel International. Beside the holding company located in Luxembourg, there are three main subsidiaries: CBL, CBF, and Clearstream Services Luxembourg (CSL). Clearstream International clears and settles securities transactions in 38 currencies in 33 markets (including all 15 national markets in the EU) through a network of links and service providers. For each link, Clearstream International relies on the services of a local agent, which is either another central securities depository or a financial institution in the respective market. Clearstream International also offers a wide range of ancillary services.

Clearing and settlement by Clearstream

Euroclear Bank is owned by Euroclear PLC, which in turn is owned by 121 institutional shareholders - none of which holds more than 5% of the share capital. As with Clearstream International, Euroclear focuses on the clearance and settlement of internationally traded securities, clears and settles securities transactions in 42 currencies in 33 markets (including all 15 national markets in the EU) and provides a wide range of ancillary services Euroclear has signed a memorandum of understanding with Brussels Stock Exchange (BXS) and the Amsterdam Stock Exchange (AEX) to integrate the respective national CSDs of Belgium and the Netherlands, CIK and Necigef. Thus, settlement of all transactions on the Euronext exchange will be located in Euroclear. In 2000, all Irish government bond settlement activity was transferred to Euroclear.

Clearing and settlement by Euroclear

An electronic "bridge" linking International and Euroclear has existed since 1980 and was substantially upgraded in 1993. This bridge allows Clearstream and Euroclear participants to deliver securities free or versus payment to each other. Initiatives to further improve the efficiency of the bridge have been announced recently.

Bridge between Clearstream and Euroclear

III. Conclusions

This overview of institutional arrangements for clearing and settlement confirms the extent of fragmentation in the EU infrastructure. While the clearing and settlement infrastructure is undoubtedly in a phase of consolidation - driven primarily by developments at the trading level - there remains a very substantial number of different national and international providers of these services. For example, there are 19 CSDs and two ICSDs providing various types of services and with various governance structures. Some Member States have independent clearinghouses with CCPs while others have clearing and settlement

integrated in one provider. One Member State has neither clearing nor settlement infrastructure. In some Member States, clearing and settlement providers are privately owned and independent of other market infrastructures, while in other Member States providers are integrated into other market infrastructures and/or have the State as shareholders. Moreover, although cross-border links exist between many of these providers, the evidence suggests that these links are not widely used.[16] On the basis of these institutional differences alone – and without reference to the differences in technical requirements/market practice, taxation and legal frameworks that are discussed in Section 5 - the complexity of post-trade processing for the pan-EU investor is obvious. The extent to which this complexity is reflected in the cost of clearing and settling cross-border transactions is examined in the next section of the report.

The EU clearing and settlement infrastructure is consolidating but there remain a very substantial number of different national and international providers of these services.

[16] According to ECB data, only 29 links are used out of the 62 currently available for cross-border use of collateral in ESCB credit operations.

TABLE 3.1
Summary Table of Institutional Arrangements for Securities Trading, Clearing and Settlement in the European Union

Country/ICSD	Trading	Clearing	Settlement	Settlement links
Belgium	In September 2000 the exchanges of Brussels, Amsterdam and Paris merged to form Euronext, comprising a cash market for equities and bonds, a derivatives market and a commodity market.	Clearnet.	Settlement is provided by the National Bank of Belgium's (NBB) system and CIK, which is expected to merge with Euroclear.	CIK has links with France, Netherlands, Switzerland, Germany and Euroclear Bank.
Denmark	The Copenhagen stock exchange (CSE) is part of the NOREX using SAXESS; trading of futures and options transferred to the fully automated Swedish derivatives system.	No CCP; the Danish Securities Centre (VP) undertakes the clearance of securities transactions; FUTOP, clears all derivatives contracts.	VP provides settlement services for the CSE and also settles OTC trades; FUTOP settles derivatives transactions.	VP has established a link with Sweden, Euroclear and Clearstream Banking Luxembourg.
Germany	Eight stock exchanges of which Frankfurt is the most important; options and futures traded on Eurex exchange.	No CCP; clearance and settlement is performed by Clearstream Banking Frankfurt AG (CBF), the national CSD; derivatives trades, Eurex-Bond trades and Euro-Repo trades are cleared via EurexClearing AG.	Clearstream Banking Frankfurt provides settlement of all securities transactions.	CBF has links to Euroclear, the Netherlands, Austria, Finland, Luxembourg, Spain and Italy.
Greece	HELEX Exchanges S.A operates three exchanges; HDAT is an electronic secondary market for Greek government securities.	No independent clearinghouse or CCP for securities. ADECH: a CCP for trades on the Athens Derivatives Exchange.	Two settlement systems: BOGS (managed by the bank of Greece) for government dept instruments and CSD SA (part of HELEX Group) for other securities.	CSD SA not linked to other CSDs but proposes to link via the ECSDA-sponsored Eurolinks system; BOGS has no links with foreign CSDs.

Country/ICSD	Trading	Clearing	Settlement	Settlement links
Spain	Four stock exchanges with a common trading platform; government debt traded OTC on CADE; futures and options markets managed by MEFF.	No independent clearinghouse or CCP for securities; MEFF acts as a CCP for the derivative markets, integrating the trading, clearing and settlement of derivatives.	Spain's main settlements systems are the SCLV, SCLV AIAF and CADE; in addition three regional systems with limited scope.	SCLV and CADE have established inks with Italy, the Netherlands, France and Clearstream Banking Frankfurt.
France	Euronext Paris operating four regulated markets.	Clearnet.	Euroclear France (formerly Sicovam) operating RGV.	Euroclear France has links with Belgium, Germany, Spain, Italy, Luxembourg, Austria, the Netherlands and Finland; Euroclear Bank.
Ireland	The Irish Stock Exchange	No independent clearinghouse; clearing undertaken by the relevant settlement system.	Equity and corporate bond transactions settled in CREST (UK); government bonds transactions settled in Euroclear[2]	
Italy	Italian Stock Exchange operated by Borsa Italiana S.p.A	Clearing of securities provided via LDT procedure operated by the Banca d'Italia; Cassa di Compensazione (CCG) is clearinghouse for derivatives market.	Settlement provided in Monte Titoli via the LDT procedure or directly for OTC transactions	Monte Titoli has links to Belgium, Germany, France, Austria, Spain and the Netherlands.
Luxembourg	Luxembourg Stock Exchange.	No independent clearing house; clearance undertaken by Clearstream Banking Luxembourg.	Clearstream Banking Luxembourg.	Electronic bridge with Euroclear Bank. Links to Belgium, Austria, Denmark, Netherlands and Italy.

Country/ICSD	Trading	Clearing	Settlement	Settlement links
Netherlands	Euronext Amsterdam.	Clearnet.	Euronext transaction to be settled at national level until the end of2003; services provided by Negicef.	Necigef, the national CSD, is linked to Belgium, France, Germany, England, Finland, Austria, Luxembourg, Italy, Spain, and Switzerland.
Austria	Vienna stock exchange and NEWEX.	No independent clearinghouse in Austria; National CSD clears securities; Vienna stock exchange (OtöB) clears derivatives; Clearstream Banking Frankfurt clears NEWEX transactions.	National CSD for Vienna stock exchange operated by OeKB; Clearstream Banking Frankfurt for NEWEX.	Belgium, Germany, Hungary, France, Luxembourg, Italy, Netherlands and Switzerland.
Portugal	Lisbon and Oporto Stock Exchange (BVLP); MTS Portugal for government debt.	Interbolsa	Interbolsa and SITEME (owned by Bank of Portugal).	
Finland	Helsinki Exchanges (HEX)	No independent clearinghouses or CCP; clearance provided by APK, the national CSD.	Settlement provided by APK and HEX for derivatives.	APK has links to Clearstream Banking Frankfurt and Euroclear.
Sweden	The OM Stockholm Exchange has one trading system (SAXESS) for trading equities and derivatives.	No independent clearinghouses or CCP; Om exchange provides clearing for securities and derivatives.	Settlement provided by VPC.	VPC has links to Denmark.

Country/ICSD	Trading	Clearing	Settlement	Settlement links
United Kingdom	Nine regulated markets – operated by LSE, LIFFE, OM, Tradepoint, virt-x, Coredeal and Jiway (owned by OM).	London Clearing House (LCH) is principal provider of clearing and acts as CCP for several markets; OM and Jiway operate in-house clearing; TradeGo is CCP for Coredeal.	CrestCo settles transactions in UK and Irish equities, UK corporate and government debt; Jiway offers internal settlement.	CrestCo has links to Euroclear, SIS and DTCC and indirect links to all North American and west European markets.
Clearstream International		Clears and settles securities transactions in 33 markets through a network of links.		
Euroclear Bank		Clears and settles securities transactions in 33 market through a network of links.		

Section 4: Cost of clearing and settling cross-border securities transactions in the European Union[17]

I. Scope of exercise

Fragmentation in the EU clearing and settlement infrastructure creates inefficiency by increasing risk in cross-border securities transactions and by erecting barriers to competition between national service providers. Inefficiency in the clearing and settlement of cross-border transactions relative to domestic transactions is reflected in three types of additional costs to the pan-EU investor. These are (i) direct costs in the form of higher fees for the cross-border clearing and settlement services provided; (ii) indirect costs in the form of extra back-office facilities that must be maintained (often bought in from an intermediary) so as to manage the clearing and settlement of cross-border transactions[18]; and (iii) opportunity costs in the form of inefficient use of collateral, a higher incidence of failed trades and trades that are simply foregone because of the difficulties involved in post-trade processing across borders.

Inefficiency in cross-border clearing and settlement is reflected in direct costs, indirect costs and opportunity costs.

Estimation of the additional costs of cross-border clearing and settlement is a difficult exercise. The opportunity costs are largely unobservable and could be estimated only by modelling the counterfactual of a fully integrated EU clearing and settlement infrastructure. Constructing such a model is beyond the scope of this report and would, in any event, be a highly speculative exercise. The indirect costs associated with the extra back-office facilities necessitated by the current fragmented infrastructure are observable. However, analysis of these costs would require access to detailed managerial accounts of the investors and intermediaries concerned. As the Group does not have such access, the analysis in this report is confined to the direct costs of cross-border clearing and settlement. However, it should be noted that there is evidence to suggest that these direct costs constitute a relatively minor share of total.[19]

The analysis in this report focuses on the direct costs of inefficiency.

[17] This section of the report draws on analysis carried out by the Centre for Economic Policy Studies (CEPS) as part of its wider study of EU settlement arrangements.
[18] These costs relate to extra staff and skills needed to have sufficient knowledge of the specific characteristics of the local securities, as well as the local language, legal system and possibly technological requirements.
[19] See Annex III for a discussion of indirect and direct costs based on estimates by Euroclear Bank and Clearstream International.

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II. Estimating the additional cost of settling a cross-border transaction

Comparison of settlement fees

An obvious approach to analysing the additional costs of clearing and settlement of cross-border securities transactions would be to compare the fee schedules for the processing of internal (i.e. intra-system) and external (i.e. inter-system) transactions by the various providers. However, there are problems of data availability. Very little information is available on clearance costs, while many CSDs are reluctant to make their settlement price lists public, limiting the scope for comparing fee schedules. Nevertheless, Tables 4.1 (a), (b) and (c) present a sample of the published settlement fees of EU providers. Table 4.1 (a) lists the settlement fees of national CSDs, whose activities are predominantly focussed on their domestic markets. The two ICSDs – Clearstream and Euroclear – focus more on the processing of cross-border transactions and Tables 4.1 (b) and 4.1 (c) list their respective fee schedules for selected markets. The fees of the ICSDs are categorised under three headings: (i) internal or external settlement; (ii) international or domestic instruments; and (iii) equity or bonds.

A comparison of settlement fees is an obvious approach in assessing the relative cost of cross-border and domestic transactions.

The data suggest that the settlement fees of the ICSDs are considerably higher than those of the national CSDs. This is particularly the case for external settlement, where the securities being processed are transferred between systems. Fees for external settlement by the ICSDs in the major markets such as the United States or United Kingdom are relatively low, while the more expensive settlement occurs where trading volumes are limited. This phenomenon is probably attributable to scale economies in the settlement process and/or the higher degree of competition in these markets.

The data suggest that the settlement fees of the ICSDs are considerably more expensive than those of the national CSDs....

Table 4.1

Fees for Settlement in the EU

(a) Settlement fees of a sample of national CSDs, in euro

National CSDs	Mainly domestic transactions	
	Equity	***Bond***
Denmark	0.11-2.28	
Germany	0.25-0.40	0.125-5.00
French	0.30-1.13	0.30-1.13
Italy	0.72	
United Kingdom	0.32-0.90	
Switzerland	0.26	

(b) Settlement fees of Clearstream for selected markets, in euro

CSD	Internal				External			
	International securities		***Domestic securities***		***International Securities***		***Domestic securities***	
	Equity	Bond	Equity	Bond	Equity	Bond	Equity	Bonds
Clearstream LU	2.00	1.35	2.00	1.35	..	..	..	..
Euroclear Bank					2.71	1.35	2.71	1.35
SIS			..	..	32.47	32.47	27.60-48.70	21.65-27.06
DE			2.16	2.16	32.47	32.47	21.65	21.65
FR			..	..	32.47	32.47	13.53-27.06	13.53-27.06
UK			..	..	32.47	32.47	10.82	10.82
US			..	..	32.47	32.47	5.41	10.82

(c) Settlement fees of Euroclear for selected markets, in euro

CSD	Internal				External			
	International securities		***Domestic Securities***		***International securities***		***Domestic securities***	
	Equity	Bond	Equity	Bond	Equity	Bond	Equity	Bond
Clearstream LU			..	..	1.03-2.71	1.03-2.71	..	..
Euroclear Bank	0.49-2.16	0.49-2.16	..	..	-	-	-	-
SIS			0.60-2.71	0.60-2.71			9.74-16.23	5.94-10.80
DE	..	..	0.32-1.73	0.32-1.73	..	..	4.33-8.66	1.52-6.49
FR	..	..	0.60-2.71	0.60-2.71	..	..	23.81-32.47	7.58-21.65
UK	..	..	0.54-2.16	0.54-2.16	..	..	6.49-10.82	9.74-16.23
US	..	..	0.54-2.16	0.54-2.16	..	..	4.33-8.66	6.49-10.82

Source: CEPS using data from national CSDs, Clearstream and Euroclear.

Apart from the problem of data availability, there are important limitations to the approach of comparing settlement fee schedules. There is neither a "typical" fee nor a "typical" service in processing a domestic or cross-border securities transaction. The fee structure of providers tends to be highly complex, with the fee actually paid by clients dependent on a wide range of factors. These factors include the type of securities to be processed, the type of client, the volume of business of that client, the client's method of payment, the client's

...but, the comparability of the data is limited by the absence of a typical settlement fee and a typical settlement service.

relationship with the provider (e.g. share in ownership of the CSD) etc. Meanwhile, the settlement service provided varies with the provider. Some CSDs provide only the narrow settlement functionality while others offer a range of ancillary services, such as intra-day credit and securities lending. A simple comparison of the fee schedules for settling a domestic and cross-border transaction is, therefore, likely to yield a misleading view of the relative costs.[20]

Comparing operating income of providers

An alternative approach to calculating the relative costs of settling cross-border and domestic transactions in the EU focuses on the operating income of service providers per transaction settled. This more indirect approach to estimating the cost of settlement services was used by the London Stock Exchange (LSE) in its submission to the European Commission in connection with DG COMP's separate investigation into the pricing of clearing and settlement in the EU. The LSE submission was also provided as a response to the questionnaire used in preparing this report. By using the income and expenditure accounts of the clearing and settlement providers to derive an implicit measure of settlement costs, the LSE approach bypasses many of the limitations of a direct comparison of fee schedules. However, this approach is not without problems of its own and these are discussed below.

An alternative approach focuses on the operating income per transaction settled....

Data on the operating income from settlement can, in principle, be obtained from the financial statements of the relevant service providers. In providing the data for this report, the Center for Economic Policy Studies (CEPS) have widened the coverage of the LSE data to include a larger number of EU settlement providers. In addition, the data set has been updated and refined to take account of differences in accounting practices between the various providers[21]. On this basis, Table 4.2 presents an overview of the operating income of the main EU settlement providers, as well as the ICSDs. Data on the Swiss national CSD and the US DTCC are also included. This subset of EU CSDs has been selected to ensure the comparability of data on their operating income[22]. Several of the EU CSDs have been excluded because they are integrated with other parts of their domestic market infrastructure and separate accounts for settlement activities are unavailable. For others, data are unavailable for the period after 1999.

...in a subset of CSDs for which comparable data are available.

[20] Determining the full cost of cross-border trading in Europe, and elsewhere, would require an assessment of the cost or pricing schedule of global/local custodian which have the biggest stake in cross-border settlement. Euroclear Brussels and Clearstream International have been assessed in this study because of the availability of financial information. However, they can not be considered as benchmark for cross-border trading costs, as they have a very limited portion of this business and primarily deal with eurobonds.

[21] In particular, interest income, items of depreciation and amortization and exceptional costs have been removed where it has been possible to identify these items. As it has not always been possible to identify custody income in the annual statements, this has been retained in total operating income. In some cases, custody income represents a significant share of total operating income.

[22] Nevertheless, full comparability cannot be guaranteed, as adjustments to the financial accounts of the various providers involve subjective judgements.

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Table 4.2: Operating income per transaction (in euro) of selected CSDs

	Organisation	Operating income (€)	Transactions (pre-netting)	OPINC/transaction (€)	Transactions (post-netting)	OPINC/transaction
ICSD	Euroclear Bank	360,590,000	11,000,000	32.78	11,000,000	32.78
ICSD	Clearstream Luxembourg	401,175,000	12,000,000	33.43	12,000,000	33,43
DK	VP	27,122,013	6,800,000	3.99	6,800,000	3.99
DE	Clearstream Frankfurt	268,746,000	125,000,000	2.15	125,000,000	2.15
ES	SCLV	45,758,000	11,000,000	4.16	11,000,000	4.16
GR	CSD	47,805,161	21,973,933	2.18	21,973,933	2.18
FR	Euroclear France	144,968,647	135,000,000	1.07	41,000,000	6,60
FR	Clearnet France	125,448,000				
IT	Monte Titoli	22,175,332	126,395,972	0.18	8,783,635	2,52
PT	Interbolsa	14,205,395	8,654,761	1.64	8,654,761	1.64
SE	VPC***	43,125,089	14,633,242	2.95	14,633,242	2.95
UK	CREST**	143,446,634	58,816,750	2.44	58,816,750	2.44
EU	EU	1,644,565,272	531,874,658	2.86+	319,662,321	5.14
	EU (excl. ICSDs)	882,800,272	508,874,658	1,49+	296,662,321	2.98
ICSD	SIS	103,231,065	17,745,900	5.82	17,745,900	5.82
US	DTCC++	638,261,727	1,387,500,000	0,46	230,271,931	2.77

Sources: CEPS using data from national CSDs, Clearstream and Euroclear

Explanatory Note

Number of transactions:	Pre-netting. The data has been obtained from CSDs (either annual reports or other public documents, web-page etc). Additional information has been taken from the "Blue Book 2000" of the European Central Bank. post-netting data provided where applicable. Transactions should be single-counted. However, this is not as straightforward as it appears. The number of Clearstream Frankfurt above is single-counted stock-exchange trades only.
Operating income:	Taken from profit-and-loss accounts of CSDs, as figured in the CSDs annual reports. The figures are from 2000 unless otherwise stated.
Exchange rates:	If data is not originally in euro, the following exchange rates have been used: 1€ = US$0.924; 1€ = DKr7.45; 1€ = SKr8.45; 1€ = £0.69
CCPs:	If a CSD does benefit from netting then the operating income of that CCP has been included (Clearnet France, NSCC). It has not been possible to determine the operating income of Banca d'Italia's L.d.T.
+	Per transaction operating income (excluding the income of Clearnet)
++DTCC:	If subtract interest income, the DTCC's discount policy makes expenditures exceed revenues. The share of interest income (11% of total income) has, therefore been subtracted from the discount as well. This produces an operating income of €638m
ICSDs:	Banking revenues are core income for ICSDs, as their services are different from other CSDs. The banking revenues of Euroclear Bank, on the other hand, are largely excluded in the annual statement of Euroclear. This is due to an agreement relating to the exit of JP Morgan (see annual report p. 65).

** Daily average multiplied by 250 working days.

*** VPC settlement income amounted to €15,2 million in 2000. The remaining two thirds of total operating income is mainly made up of issuance income, which is not a core activity of a CSD. The total figure has been included, however, as it has not been possible to verify whether other EU CSDs also have issuance income.

To standardise the implicit costs of settlement across CSDs, it is necessary to focus on their operating income per transaction settled. These data are also presented in Table 4.2. However, a particular difficulty with comparing the per-transaction income of settlement providers relates to the treatment of transaction netting. Netting reduces the number of transaction that requires to be settled by the provider on behalf of its clients and so raises the efficiency of the settlement process. To the extent that netting is used by a provider, it would seem appropriate that its operating income should be calculated on the basis of post-netting transaction figures but with the operating income of the organisation carrying out the netting included. However, it should be noted that the use of post-netting data (by reducing the underlying transaction volume) has the somewhat counter-intuitive effect of increasing the measured operating income per transaction even though the efficiency of the service provided is raised. The choice between the use of pre-netting and post-netting transactions data is important when comparing the performance of EU CSDs with the DTCC, since the latter makes extensive use of netting (on average, of about 90% of total transactions). However, comparison among the EU CSDs is relatively less affected because netting is less prevalent.[23] However, for completeness, Table 4.2 presents analysis based on both pre-netting and post-netting transaction data.

Computing revenue per settlement transacted allows the implicit costs of settlement to be standardised across CSDs.

Table 4.2 indicates that the subset of EU CSDs (including the two ICSDs) settled 531 million transactions before netting in 2000, which is less than 40% of the 1,388 million transaction settled by the DTCC in the United States. The relative performance is very different on the basis of post-netting data, with the subset of EU CSDs settling 320 million transactions, about 40% more than the 230 million transactions settled by the DTCC. Irrespective of the transactions data used, however, the operating income of the subset of EU CSDs (about €1,645 million) was more than twice that of the DTCC (about €638m). In terms of the chosen proxy for settlement cost - per transaction operating income - the following inferences can be drawn from the data:

The data suggest that total EU settlement volumes and operating income are higher than those in the United States.

- *Settlement of domestic securities transactions in the EU appears to be relatively cost efficient.*

The fragmentation of the EU clearing and settlement infrastructure would suggest that the cost of cross-border settlement should be high relative to corresponding services provided by the more integrated US infrastructure. However, such arguments will not apply to the settlement of domestic transactions in the EU. Indeed, many of the settlement providers in the EU employ more advanced technologies than that used in the United States. Accordingly, it is useful to consider how the income per transaction of national CSDs in the EU compares with the DTCC, which is the analogous provider for the United States. On the basis of post-netting transaction data, it is evident that the DTCC ranks towards the middle of the range of EU providers in terms of per transaction income, with the (weighted) average figure for the selected national CSDs (€2.98) somewhat higher than that for the DTCC (€2.77). On the basis of pre-netting transaction data, however, the corresponding per-

The EU compares well to the United States in terms of domestic settlement costs...

[23] The EU CSDs that have used equity netting in 2000 were Euroclear France, CIK, Negicef and Monte Titoli.

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transaction operating income of the national CSDs (€1.49) is about three times that of the DTCC (€0.46), suggesting scope for substantial cost efficiencies from a wider use of settlement netting within the EU.[24]

- *Settlement cost using the ICSDs appears to be relatively high, reflecting the fact that they focus mainly on cross-border transactions.*

The transaction volume of the two ICSDs represents a very small part of the total volume in the EU (only about 7.5% of the volume of the selected CSDs). However, it would seem that their per-transaction income is very much higher (i.e. about 11 times on average post-netting) than those of the national CSDs. A part of this differential can be explained by differences in the services provided. However, it is likely that the bulk of the differential reflects the fact that the ICSDs are mainly active in the settlement of cross-border transactions and so operate in a more complex environment of multiple markets. The ICSDs (and presumably global custodians which conduct similar operations) internalise the inefficiencies caused by fragmentation in the EU clearing and settlement infrastructure on behalf of their clients and this is reflected in a higher settlement cost. In this way, the settlement charges of the ICSDs are likely to include not only the direct costs of settling the cross-border transaction but also much of the indirect costs as clients out-source the required back-office duties for managing cross-border transactions.[25]

…but inefficiency in settling across borders is reflected in the relatively high per-transaction settlement income of the ICSDs.

III. Conclusion

While the direct costs of clearing and settlement represent a minor share of total, the cost analysis above highlights a stark contrast in the efficiency of settling domestic and cross-border securities transactions in

[24] While the major securities settlement participants are included in Table 4.2, settlement providers in three Member States (Belgium, Finland and Netherlands), and parallel securities settlement systems (e.g. Spain) are not counted. It is unclear how the inclusion of these providers in the analysis would affect the difference between the EU average and US average.

[25] This is further evidenced by the fact that the bulk of ICSDs' income do not relate to settlement fees but to the servicing fees charged to support holdings in foreign securities. It should be noted, however, that the data for the ICSDs also include transactions with currency areas (mainly the United States and Japan) outside of the European Union.

the European Union. Efficiency in the settlement of domestic transactions (mainly by the national CSDs) is similar to the analogous service in the United States. Within the EU, however, the evidence suggests that the settlement of cross-border transactions is substantially less efficient than the settlement of domestic transactions. Allowance must be made for issues of comparability, but it is difficult to avoid the conclusion that a large part of the inefficiency in cross-border settlement emanates from the continued fragmentation of the EU clearing and settlement infrastructure. The next section draws on the views of market participants to identify the barriers that lie at the source of this fragmentation.

The evidence points to a stark contrast in the cost of domestic and cross-border settlement in the EU, suggesting a need to address sources of fragmentation in the infrastructure.

Section 5: Barriers to efficient cross-border clearing and settlement in the EU

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As discussed in earlier sections, the clearing and settlement infrastructures in the Member States have evolved in a manner that best serves the needs of their domestic markets. In consequence, significant national differences in clearing and settlement procedures have emerged across the EU. Some of these differences create barriers to efficient cross-border clearing and settlement to the extent that they impose additional risk and cost on investors who operate in more than one national market. For the purpose of this report, therefore, a barrier to efficient clearing and settlement of a cross-border transaction is defined as any feature which reduces significantly the efficiency of that process relative to the clearing and settlement of a domestic transaction. This section presents a list of such barriers.

A barrier to efficient cross-border clearing and settlement is defined as any feature that reduces significantly the efficiency of that process relative to the clearing and settlement of a domestic trade.

The list of barriers to efficient cross-border clearing and settlement has been drawn up largely on the basis of responses to a questionnaire, which was circulated to market participants via the Internet.[26] A total of 38 financial institutions, including users and suppliers of clearing and settlement services, responded to the questionnaire. The list of barriers identified by the Group has been sub-divided under three main headings: (i) barriers relating to national differences in technical requirements/market practice; (ii) barriers relating to national differences in tax procedures; and (iii) barriers relating to issues of legal certainty that may arise between national jurisdictions. The order in which the barriers are listed has been established also on the basis of the responses to the questionnaire.[27] When identifying potential barriers, respondents were asked to provide concrete examples wherever possible. Some of these examples are reproduced in this report for illustrative purposes only.

Based on responses to a questionnaire, the Group has drawn up a list of barriers under the headings of technical requirements/market practice, taxation and legal certainty.

I. Barriers related to technical requirements/market practice.

A number of important barriers to efficient cross-border clearing and settlement in the EU relate to national differences in technical requirements/market practice. These differences typically reflect

[26] See Annex IV for a copy of the questionnaire. The focus of questionnaire goes beyond the identification of barriers to also consider the main drivers of change and priorities for future development in the clearing and settlement industry. The analysis in this section focuses only on those responses to the questionnaire, which relate to identifying barriers to efficient clearing and settlement. Responses to the other parts of the questionnaire will be used as input to a follow-up report by the Group and will also be used in preparing a Communication from the Commission to the Council and Parliament.

[27] See Annex V for list of respondents to the questionnaire and Annex VI for a summary analysis of the responses.

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corresponding differences in the structure of national securities markets. National differences relate more to settlement than to clearing, and their impact is greater for equity markets than for bond markets or derivatives markets. Particular problems arise with the settlement of equity transactions because they are not yet standardised and because the complexities of national equity markets are more difficult for participants to understand.

Barriers related to technical requirements and market practices reflect differences in national market structures.

Ten barriers relating to national differences in technical requirements/market practice have been identified and are listed below. In some instances, the barrier identified is a specific case of another barrier but is considered sufficiently important to be highlighted separately. Although they are treated under one heading, a clear distinction can be drawn between those barriers that relate to technical requirements and those that relate to differences in market practice. Technical requirements are typically the responsibility of the clearing and settlement systems, while market practice is often based in law. However, the extent to which a specific market practice has a legal basis is not always evident and varies from Member State to Member State.

Ten barriers relating to technical requirements and market practices have been identified.

Barrier 1: National differences in information technology and interfaces

National clearing and settlement systems operate on a variety of non-standardised platforms. The implied differences in information technology and interfaces add to the cost of cross-border clearing and settlement by requiring a higher level of manual input. Connection and messaging protocols vary from one clearing and settlement system to another and there are different rules of transfer and product definitions, e.g. some systems require instruction of a repo as a repo whereas others require two separate cash legs to be entered. There are also differences in reporting requirements between systems. The additional cost arises because institutions must invest in understanding the technologies concerned and in multiple back-office interfaces to communicate with all necessary systems, with a need for additional staff to understand and support the various arrangements. On an individual level, the technical difficulties are manageable but the desire to avoid multiple linkages and the burden of following numerous rules and rule changes are key drivers in the use of local custodians and agents. While an assessment of the relative merits of different information technologies for clearing and settlement is beyond the scope of this report, it is essential to limit the inefficiencies related to maintaining multiple interfaces. To this end, emphasis should be placed on standardisation of communication between the various clearing and settlement systems. ECSDA have drafted a set of such standards for communication between CSDs, to support cross-border settlement of both DVP and free-of-payment transfers. In this context, there is also an urgent need for the adoption of an EU-wide protocol defining message formats between systems and their members.[28]

National differences in IT platforms and interfaces should be minimised by standardisation of communication between systems.

[28] One specific suggestion from market participants in this context was that a deadline could be set for the implementation of these protocols in respect of Eurosystem operations so as to encourage widespread acceptance.

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Barrier 2: National clearing and settlement restrictions that require the use of multiple systems.

National restrictions on the location of clearing and settlement typically require investors to use the national system. Such restrictions constitute a barrier by requiring investors, who engage in cross-border securities transactions on multiple stock exchanges, to use multiple post-trading systems. The need to use multiple systems is often generated by rules that create exclusive links between the different elements of a national securities market infrastructure. In particular, rules can designate that a specific central counterparty and settlement system should be used for a particular trading platform and may impose constraints on the choice of location of settlement by tie-in arrangements and 'silos'.[29] Such restrictions prevent participants, who undertake cross-border transactions, from centralising their clearing and settlement. In the case of clearing, inefficiency arises when more than one exchange offers trading in a single security, but each insists on the use of a different central counterparty. If a participant to a transaction bought the security on one exchange, but sold it on another, he would be required to supply margin for each transaction at each of the central counterparties. No margin would be required if a single central counterparty were used, because the two transactions would net to zero. In the case of settlement, a series of pools of collateral must be maintained to cover participant's activity in each system, which is inefficient and requires cross-system transactions to align those portfolios of collateral to their needs.[30] Rather than maintaining membership of multiple systems, many institutional investors 'outsource' clearing and settlement functions to agents that offer a standardised service for communication, reporting, asset and cash management, etc.

National restrictions on the location of clearing and settlement prevent cross-border investors from centralising their activities.

National restrictions on clearing and settlement may have been efficient in the context of segmented national securities markets. However, the logic behind the concentration of settlement in a single national (and closed) system breaks down once securities are available to be traded in multiple locations and once participants from multiple locations are admitted to the market. These restrictions seem outdated in the context of efforts to integrate the EU financial system. Their removal, together with the creation of bridges between national systems, would reduce the need for institutions to outsource their clearing and settlement activities and would encourage competition between systems. Accordingly, Member States should re-consider the appropriateness of any such

Such national restrictions are outdated in the context of an integrated EU securities market and should be removed.

[29] While such rules are frequently justified as facilitating straight through processing and as reducing credit risk for the investor, it is unclear why investors – either resident or non-resident – should be obliged to take advantage of these benefits. Also technology upgrades have reduced substantially these benefits, as other means than vertical integration allows the same STP objective to be achieved.

[30] As a specific case, it should be noted that domestic securities in the repo market continue to be held in domestic systems in order to facilitate delivery to the domestic central bank for intra-day and overnight credit and for Eurosystem operations. It is not permitted under the Eurosystem framework to deliver domestic assets directly to a central bank in another Member State, unless there is no domestic system available.

restrictions that may exist within their domestic securities market infrastructure and take the necessary steps to remove them.

Barrier 3: Differences in national rules relating to corporate actions, beneficial ownership and custody.

National differences in the rules governing corporate actions, e.g. the offering of share options, rights issues etc., can be a barrier to efficient cross-border clearing and settlement. As corporate actions often require a response from the securities owner, national differences in how they are managed may require specialised local knowledge and/or the lodgement of physical documents locally, and so inhibit the centralisation of securities settlement and custody. Particular difficulties in respect of corporate actions arise from the inconsistent treatment of compensation and cash accruals and from the differing practices used to apply the effects of corporate actions to open transactions, e.g. different countries apply different treatments to the payment of a dividend on a security involved in an open transaction. Efforts to improve consistency in the rules governing corporate actions are essential if the integration of EU equity markets is to proceed. More specifically, implementation (as planned through ECSDA) of ISO 15022 message standards for communication between CSDs on corporate actions would help to speed up information dissemination across systems.

Rules on beneficial ownership, custody and corporate actions should be harmonised at the EU level.

Barrier 4: Absence of intra-day settlement finality

Intra-day settlement finality is needed to ensure that pan-EU clearing and settlement can be delivered efficiently, while minimising systemic risk. At present, intra-day settlement finality cannot be guaranteed for all cross-border transactions within the EU. Settlement-cycle timing differences between platforms tend to impede same-day transfer between systems and so increase the likelihood that a transfer will not be finalised within a trading day. If same-day transfer or finality cannot be achieved, there is a requirement for the counterparties to provide extra collateral or incur funding costs.[31] Moreover, the implied higher risks of fails in cross-border trades due to the absence of intra-day settlement finality has negative implications for the stability of an increasingly integrated EU financial system. While settlement systems are already required to have intra-day finality for ECB operations, it will be necessary for all settlement systems to take steps to ensure that any links between them provide intra-day settlement finality within a fixed (short) period, if cross-border trading is to be encouraged on an efficient and safe basis.

Intra-day settlement finality must be guaranteed across the EU so as to ensure the smooth functioning of securities markets and to avoid systemic risk.

[31] Costs and risks arise from the delay in aligning securities between the local CSDs or between them and the ICSD, as it is not always possible to move securities between the two on the same day due to overnight batch processes and inadequate linkages.

Barrier 5: Practical impediments to remote access to national clearing and settlement systems

As market participants are required to interface with multiple post-trading systems in the context of cross-border transactions, there is a resultant duplication of costs. This cost duplication is exacerbated when it is necessary to establish a presence in each country where a relevant system is located. Remote access – i.e. the possibility for an institution to become a member of a system located in another Member State – is both legally and technically possible. However, practical impediments often remove it as an option. Some of the impediments relate to the diversity of the systems themselves, which are described elsewhere in this section. Other impediments relate to market rules that put remote members at a disadvantage to local members or which render nominal access unworkable. These rules result in the need to employ third parties or establish a local entity in order to achieve parity with local members. For example, a remote member might be required to use a local agent bank for cash settlement or, to have an account at the local central bank, although access to such accounts is only available to domestic institutions. When an account at the central bank is allowed, it is not accompanied by the right of access to intra-day liquidity, which means that the remote member must use a local bank to finance any funding shortfall. Operators of systems should seek to ensure that access to their systems is on the basis of non-discriminatory criteria, and that where possible those accessing the system remotely are on a level footing with local members.

Remote access to a system located in another Member State is both legally and technically possible. However, practical impediments often remove it as an option for investors.

Barrier 6: National differences in settlement periods

Cross-border clearing and settlement is complicated by national differences in settlement periods and the need to make adjustments as settlement periods change. Particular difficulty can arise when the international settlement convention differs from that of the local market, e.g. Germany settles on T+2, while the international convention is T+3. Differences in settlement periods arise mainly in the case of equities and create a mismatch in settlement of obligations, which must be addressed by using funding arrangements with other market participants. These funding arrangements can add significantly to the overall cost of executing a cross-border transaction. National differences in settlement periods again reflect the historical preferences of participants in the domestic market, and their removal is contingent on the ability or willingness of local suppliers of settlement services to make the required financial investment to shorten the period. While the international consensus favours a short settlement period recommends to limit credit risk, as a minimum, there should be a harmonised settlement period for the EU as a whole.

Settlement periods should be harmonised across the EU so as to reduce the need for costly funding arrangements in cross-system transactions.

Barrier 7: National differences in operating hours/settlement deadlines

Differences in the operating hours of national systems complicates cross-border settlement, if at least one of the systems concerned does not operate real-time settlement or frequent batches. In such

circumstances, differences in operating hours can result in the incompatibility of deadlines for matching and delivery in the different systems. This type of problem is aggravated when there are different deadlines for the matching or delivery of same instrument within a settlement system, depending on where it was traded. In addition, inconsistency between the deadlines/opening hours of payment systems and deadlines/opening hours of securities settlement systems can cause problems in the use of links. Cash and stock movements are usually separate and subject to their own messages in cross-system transfers. Also, a particular cost arises where differences in operating hours result in the need to pre-position stock in one system to ensure that it is transferred to another on time. Although European settlement systems are required to conform to the operating hours of TARGET, sufficient differences remain in the hours and deadlines to impede efficient cross-border clearing and settlement. If cross-border activity is to be facilitated, these national differences will need to give way to harmonised opening hours and settlement deadlines for the EU as a whole.

Differences in operating hours can result in the incompatibility of deadlines for matching and delivery in a cross-system settlement and should be harmonised across the EU.

Barrier 8: National differences in securities issuance practice

The clearing and settlement of cross-border securities trades is hampered by national differences in issuance practice that arise due to the lack of an efficient same-day distribution mechanism.[32] Among the more important shortcomings in this area is an uneven capability across the securities markets in Europe to allocate ISIN numbers to securities issues in real-time. Standardised electronic links between issuing agents, dealers and settlement systems would enable the speedy exchange of issuance information and ISIN codes, facilitating same-day issuance.

Efforts are required to address differences in securities issuance practice, which result in an uneven capability to provide same-day issuance.

Barrier 9: National restrictions on the location of securities

National restrictions often apply to the location of securities. Such restrictions can limit the choices for issuers when placing their securities and/or make it more complicated to hold and settle those securities in Member States other than the place of issuance. In this context, two types of restrictions have been identified:

- First, there is a requirement in some Member States that issues in listed securities be deposited exclusively in the local settlement system and/or that transactions in such securities be capable of settlement exclusively on the books of the local settlement system. This seems also to be the market practice in countries where it is not enshrined in law.
- Second, there may be a connection between listing on the regulated market and registration with a local registrar. This can constrain the choice of settlement location available to users because the selection of a foreign settlement system will be less attractive, particularly

National restrictions on the location of securities complicate settlement across borders and should also be removed.

[32] In particular, the lack of an intra-day bridge and intra-day borrowing facilities at the ICSDs and the delays between the ICSDs and the local market reduce the ability to settle new issues effectively.

when the local settlement system is the approved local registrar or has already an established network of links with local registrars.

National restrictions on the location of securities reflect the evolution of historically efficient national structures, when there was little demand for trade in domestic securities by non-residents. However, formal restrictions on the location of securities are difficult to justify in the context of an integrated EU financial system and the Member States should take steps to remove them.

Barrier 10: National restrictions on the activity of primary dealers and market makers[33]

As a specific case of Barrier 1, restrictions on the activity of primary dealers and market-makers often require the setting-up of local securities operations and the settlement of primary-market transactions in the local settlement system[34]. Such restrictions prevent primary dealers and market-makers whose activities span several markets from centralising their settlements in fewer systems.[35] The inability to centralise cross-border settlements raises the cost of their operations because they are prevented from using their preferred settlement location (if any) for these market operations and, by implication, they must bear the additional expense of settlement in a remote CSD. National restrictions on the activities of primary dealers and market-makers are difficult to justify in the context of an integrated EU financial system, where market making across borders will become the norm. Accordingly, Member States should re-consider the need for such restrictions and take the necessary steps to remove them.

In particular, national restrictions on the cross-border activity of primary dealers and market – makers should be removed.

II. Barriers related to taxation

Securities are liable for taxation in the Member State where they are held, creating the potential for problems in the holding and transfer of securities across borders due to unfamiliarity with national tax regimes and the risk of double taxation. In light of the previous discussion of barriers related to technical requirements and market practice, it is clear that much of the difficulty associated with taxation of cross-border securities holdings could be eliminated by allowing investors the freedom to choose the preferred location of their securities. In this way, investors could choose to pay taxes under their preferred regime. However, even if choice of securities location were to be made available, it is likely that some investors would still hold their securities in the local

As securities are liable for taxation where they are located, problems arise due to unfamiliarity with national tax regimes and the risk of double taxation.

[33] A primary dealer is a dealer in government securities, who is recognised by the authorities and often given special responsibilities and privileges. A market-maker is a dealer, who regularly quotes bid and offer prices.

[34] An example of this type of rule is to be found in Belgium, where primary dealers are strongly recommended to hold securities in the automatic bond lending pool of the settlement system operated by the Belgian central bank.

[35] Settlement is also undertaken in multiple domestic systems for the international bond trading systems such as Brokertec and Euro MTS.

market and so would continue to face problems with national differences in the relevant tax regimes.

Three types of securities taxation have been identified as sources of barriers to cross-border securities trading within the EU. These are the withholding tax, capital gains tax and transaction taxes such as stamp duty. In the majority of cases, these taxes have a general impact on the efficiency of a cross-border transaction and are not specifically relevant to the clearing and settlement of that transaction. This report focuses primarily on the minority of cases in which taxation of securities creates barriers to efficient cross-border and settlement. However, as a matter of record, those tax-related barriers with a broader impact on cross-border securities transactions are listed in Box 5.1.

National differences in regimes for withholding tax, capital gains tax and transaction taxes are the main sources of problems.

Barrier 11: Domestic withholding tax regulations serving to disadvantage foreign intermediaries

Withholding tax relief can be granted in two ways. Relief may be provided at source, with a reduced rate or exemption applied directly to the tax payment made. Relief may also be granted by refunding the excess withholding tax on the basis of a reclaim by the investor. The clear preference of investors is for at-source relief, which is offered by the withholding agent (normally a bank or other financial institution). However, the majority of Member States restricts withholding responsibilities to entities established within their own jurisdiction and thereby disadvantages foreign intermediaries in their capacity to offer at-source relief. Even in those Member States, which allow foreign entities to assume withholding tax collection obligations, a local fiscal representative must be appointed to discharge the foreign entity's withholding obligations. The need to use a local agent or to appoint a local representative in the discharge of withholding obligations represents a significant extra cost for foreign intermediaries relative to local providers. To ensure a level playing field in the provision of withholding tax services in the context of an integrated EU financial system, it should be possible for all financial intermediaries established within the European Union to act as a withholding agent in all of the Member States. To this end, it would be necessary to ensure – probably by means of an international agreement - that each Member State can recover fully any tax receipts due from another Member State.

Foreign intermediaries can be disadvantaged in their capacity to offer at-source relief from withholding tax and a level playing field should be provided in this respect.

Barrier 12: Transaction taxes collected through a functionality integrated into a local settlement system

Taxation of securities transactions can be a barrier to efficient cross-border clearing and settlement if the applicable tax provisions or administrative practice require collection via a functionality that is integrated into a local settlement system. In these circumstances, the foreign investor's choice of provider for securities settlement is reduced because it is necessary to link up with the local settlement system that operates the tax collection functionality. This may damage cross-border activity to the extent that a more efficient choice for the particular investor is unavailable. If the said investor were to link up with another settlement system he could be faced with transaction taxes at a higher

Requirements that transaction taxes be collected through a functionality integrated into a local settlement system should be removed.

rate and might not be able to claim exemptions from the said tax or only under unfavourable conditions. For reasons of efficiency in cross-border securities and to ensure a level playing field between domestic and foreign investors, Member States should review any provisions requiring that taxes on securities transactions be collected via local systems and take the necessary steps to remove such provisions.

Box 5.1:
Tax-related barriers impacting more generally on the efficiency of cross-border securities transactions

Several tax-related barriers have been identified as impacting more generally on the holding and transfer of securities across borders rather than on the clearing and settlement process. While these barriers are not a specific focus of this report, they are relevant to the broader debate on the efficiency of cross-border securities transactions within the EU. In this regard, the main barriers can be listed as follows:

- ***Inconsistent and unnecessarily complex national rules and procedures in applying the withholding tax.***

Withholding tax regimes that apply to securities income vary significantly between Member States and between different types of securities within each Member State. In consequence, compliance with the rules and procedures surrounding withholding tax can be burdensome for investors wishing to engage in cross-border securities transactions. Complications in the application of withholding tax procedures preclude automation across clearing and settlement systems and typically involve very extensive manual intervention, usually through a local intermediary.

- ***National differences in the granting of withholding tax relief***

A fundamental difficulty in the granting of tax relief to the investor is the absence of a standard legal definition of beneficial owner for specific transaction types. The complexity involved in identifying the legal nature of the owners of securities, their liability/eligibility for exemptions and the specificity of double taxation arrangements affects the owner's entitlement to reclaim withholding tax paid on securities income. Inevitably the need to obtain local expertise requires the use of intermediaries. Local expertise is also necessitated by different national procedures for obtaining relief from withholding tax (e.g. documentation, timing of refunds, period for claiming relief). A further problem that can arise is the risk of double taxation in cross-border investments. Although most of the Member States have bilateral treaties to avoid double taxation (mostly harmonised on an OECD model agreed in the early 1960s), there are no common procedures for claiming tax treaty benefits, such as relief from withholding tax. The risk of double taxation often remains even if relief is claimed under domestic tax law provisions.

- ***Onerous capital gains tax reporting requirements on foreign intermediaries***

Differences in national capital gains tax regimes raise the cost of cross-border transactions because manual intervention - and the services of an intermediary - is required in the process of applying the relevant collection procedures.[36] A particular difficulty can arise when a capital gains tax regime imposes specific tax collection or tax reporting obligations on foreign intermediaries.[37] Such requirements may make it impossible or uneconomical for foreign intermediaries to hold the relevant securities or force them to impose holding restrictions on their customers so as to avoid taxable or reportable transactions. In addition, national capital gains tax regimes often restrict certain non-trading entities (i.e. entities that hold large numbers of securities long-term) from lending securities, if the domestic tax legislation treats a loan of securities as a sale for tax purposes.[38] As a result, market liquidity is less than might otherwise be the case.

- ***Transaction taxes reducing market liquidity***

Transaction taxes can be a barrier to cross-border securities trading to the extent that it reduces the liquidity of markets. This situation would arise where the tax applies to either stock lending and/or taking title to securities as part of collateral arrangements. For example, several Member States apply a transaction tax on the transfer of securities, whether by way of sale, loan or collateral arrangements. In some instances, a transaction tax is applicable to activities other than purchases/sales of securities and imposes costs to the investor as he takes (legitimate) evasive action.

- ***National tax authorities are not always focused on the needs of foreign investors***

National tax authorities are not always sufficiently focused on the needs of foreign investors. As tax procedures can be complex and raise interpretation questions, easy access to national tax authorities is essential. Often, language problems and a lack of orientation to the needs of the foreign-based taxpayer complicate communication between foreign intermediaries and the domestic tax authorities. Additional difficulties exist where the regional tax office of the issuer of the securities handles withholding tax relief claims.

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[36] The risk of double taxation is less than in the case of the withholding tax, as most bilateral tax treaties address the risk of double taxation of capital gains on the purchase of shares, securities and derivatives by non-residents.

[37] Examples of such difficulties include (i) a national requirement for computation of capital gains tax at the time of settlement for individual transactions, imposing a costly administrative burden on foreign operators in an environment where securities are held through multiple tiers of custodians, central securities depositories and other financial intermediaries; and (ii) the imposition of a minimum custody period on certain securities, which are then heavily taxed if this obligation is breached.

[38] In Greece, for example, lending securities will generally be treated as a disposal for capital gains tax purposes, unless the borrower retains physical possession of the securities. In France, only certain forms of stock loan are ignored for capital gains tax purposes.

III. Barriers relating to legal certainty[39]

Legal barriers that relate to cross-border clearing and settlement may be divided into three types. First, there are legal rules that inhibit competition, for example rules that impose on market users an obligation to clear and settle through a particular system or restrictions on membership of systems. Second, there are differences in tax laws. These types of legal barriers have been dealt with in the previous sub-sections. The third type of barriers reflects the existence of different legal rules defining the effect of the operation of a system, including different legal structures concerning securities themselves. This type of barrier is of a different order to the others. Barriers of market regulation and of tax can generally be changed or abolished without affecting basic legal concepts. However, laws about what securities are and how they may be owned form a basic and intimate part of the legal systems of Member States, and to change them will have many ramifications. Barriers related to legal certainty trouble securities settlement systems, clearing systems, and market intermediaries equally.

Barriers relating to legal certainty are of a different order to the others, as they cannot be removed without affecting basic legal concepts.

The national legal systems relating to the nature of and dealings in securities have evolved to reflect the specific socio-economic culture of each Member State. In consequence, there is substantial diversity in the legal treatment of securities across the EU. While the law may be well understood by participants in any one national market, the scope for complexity and uncertainty in the legal treatment of securities where more than one jurisdiction is involved leads to an inevitable lack of clarity for all. Problems of legal complexity are set to intensify as securities transactions increasingly involve more than one jurisdiction. This is illustrated by the following quotation from the BIS CPSS/IOSCO Consultative Report on Recommendations for Securities Settlement Systems (January 2001), which refers to at least 18 separate legal systems, any one of which may affect the analysis of a cross-border transaction.

National legal systems relating to the nature of and dealings in securities have evolved to reflect the specific socio-economic culture of each Member State, resulting in significant diversity across the EU.

> *"The legal framework for an SSS must be evaluated in the relevant jurisdictions. These include the jurisdiction in which the system and its direct participants are established, domiciled or have their principal office and any jurisdiction whose laws govern the operation of the system as a result of a contractual choice of law. Relevant jurisdictions may also include a jurisdiction in which a security handled by the SSS is issued, jurisdictions in which an intermediary, its customer or the customer's bank is established, domiciled or has its principal office, or a jurisdiction whose laws govern a contract between these parties."*

Whenever there is a difference of treatment between two jurisdictions concerning a particular security, there will be uncertainty about which claims to own that security will prevail. This legal uncertainty can be

Uncertainty created by national differences in the legal treatment of securities can be exacerbated if foreign investors are obliged to use local infrastructure for clearing and settlement.

[39] In identifying legal barriers, many respondents to the questionnaire argued that common EU principles are needed for the authorisation, supervision and capital adequacy of clearing houses. Common principles were seen as ensuring a level playing field for clearing houses and as minimising the risk of regulatory arbitrage among market participants. This issue will be taken up in the context of the Group's second report, which will examine the prospects for EU clearing and settlement infrastructure.

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exacerbated by the fact that foreign investors are sometimes obliged to use local infrastructure for clearing and settlement. Uncertainty is increased still further by the fact that securities themselves are legally complicated, not homogeneous, and vary widely in their legal characteristics. Three particular dichotomies should be mentioned:

(i) Equities are very different from debt securities. Equities are creations of national legislative regimes. Every EU corporate can only issue shares under and in accordance with the law of its country of incorporation. No matter where and how these shares are traded, or rights in them traded, one can never completely escape from the national regime that created them. Debt securities, by contrast, can be issued with a free choice as to form, terms and conditions of the debt, including where it falls to be paid, and what is its governing law.

(ii) Some EU legal systems recognise in certain circumstances a difference between ownership of a security outright and an entitlement against a settlement system (or intermediary) to own such a security. Others treat the two as the same.

(iii) Some debt securities are physical, but most are not. Bonds may be constituted by physical paper (either held by investors, or immobilised). They may consist of interests recorded in an accounting system that are deemed to replace physical papers. They may be issued in a fully dematerialised form, and recorded in the books of a system, or of an intermediary, or recorded in a register.

The language used to describe the legal aspects of securities trading sometimes disguises the level of complexity. For example, it is commonly said that securities may be transferred between any of the Member States. Whilst this is normally true of ownership rights, in many cases the securities themselves do not move at all. It is also often said that each security has one location. In fact, where securities consist of several different rights, holders may have a right not only against the system through which the security is cleared (in one jurisdiction) but also against the issuer (in another). Market participants rarely understand the complications that may arise because of differences in national laws applying to securities. The risks associated with legal certainty are rarely if ever acknowledged or accommodated in the transaction. Often, participants are not overly concerned by the legal aspects of a cross-border transaction by reason of believing that they are effectively insulated from such considerations by using local intermediaries for transferring and/or holding the securities. Participants only become aware of the risk when a problem with enforcing ownership claims actually arises.

Given the complexity of the issues involved, market participants rarely understand the complications that may arise because of the differences in national laws applying to securities.

Barrier 13: The absence of an EU-wide framework for the treatment of interests in securities

This barrier (and barrier 15) arises directly from the fact that in modern markets the law fails to keep pace with developments in market practice. In essence, modern practice co-locates securities with the

systems through which they are settled. The law has yet to catch up. Furthermore, EU Member States have different concepts of property and ownership (often disguised by the use of expressions such as 'proprietary rights' and '*rights in rem'* as if they had a meaning common to all EU legal systems.) The absence of an EU-wide framework for the treatment of interests in securities (including procedures for the creation, perfection and enforcement of security) has been identified as the most important source of legal risk in cross-border transactions.

The absence of an EU-wide framework for the treatment of security interests has been identified as the most important source of legal risk in cross-border transactions.

Differences in the legal treatment of securities have recently been analysed most deeply in the context of collateralisation (i.e. techniques by which securities are provided to cover exposures arising in financial market transactions). Lawyers divide collateralisation techniques into transfers of full ownership (as happens when as security is sold) and pledges (i.e. grants of security interests in securities). Pledge techniques being more complicated, they reveal in greater emphasis the legal problems created by different concepts of property and ownership. If the laws of two countries concerning how to pledge securities were identical, it would be irrelevant which were used. Since national laws are not identical within the EU, it is crucial not only to identify which law applies (dealt with in barrier 15), but also to comply with its pledging requirements. If the pledging requirements are not satisfied, the pledge may be insecure, or even invalid.

Differences in the legal treatment of securities are most evident in the context of collateralisation.

The legal strength of a pledge (or sale) of securities is not usually in question if the system or intermediary through which they are owned becomes insolvent. Across the EU, there is a uniformity of approach as to segregation of clients' assets from proprietary assets. As long as there is proper segregation of assets (a question simply of keeping orderly records), there is no issue that the securities do not form part of the assets available to creditors of the insolvent system. However, it is the issue of whether the securities in question actually belong to those in whose names they were held, which creates problems. In reality, this is an issue of finality, i.e. whether a transfer of securities from A to B made by accounting entry is final. In every national legal system within the European Union, there are (different) rules that detract from what might appear to be the finality of a transfer. These rules generally serve the purpose of protecting creditors (by bringing back into the pool of assets available for creditors securities that were transferred out just before the onset of insolvency) or victims of dishonesty (by returning assets to their rightful owners.

Problems with legal certainty in collateralised transactions relate to questions about the actual ownership of the securities concerned.

Transfers of *money* through payment systems were ring-fenced from the application of such rules by the Settlement Finality Directive, in order to ensure the legal strength and pan-EU legal uniformity of EU payment systems. It has been forcefully argued that a similar protection is needed for transfers of *securities.* The Settlement Finality Directive does deal with securities settlement systems, but in a way that falls short of full finality, in that it covers only designated systems, not intermediaries, and provides a ring-fence against claims of creditors, but not rightful owners. Steps towards finality for transfers of securities are seen in recent EU legislative initiatives (referred to in barrier 15). However, these initiatives (a) are limited to securities when used as collateral and (b) have been promoted on the basis that they will not dispossess victims of dishonesty. True finality for transfers of securities

Steps towards finality for transfers of securities are seen in recent EU legislative initiatives.

requires law reform that addresses securities in any context, not merely when used as collateral, and that overrides rules protecting creditors or victims of dishonesty. Such reform would, however, give the impression of advantaging market participants over others.

Barrier 14: National differences in the legal treatment of bilateral netting for financial transactions

The principle that mutual obligations arising in financial market transactions may be netted has been accepted throughout the EU. This arises in some countries as a natural feature of their legal system (e.g. Germany and the UK) and in some by virtue of specific legislation passed for the purpose (e.g. Spain and France). Where netting has been introduced by such legislation, its availability is normally limited to specific products, types of counterparty or forms of contractual documentation. This leads to the need for detailed analysis of the relevant features of a transaction before it can be safely assumed that netting will be available. This can be the case even where the parties' agreement that there should be netting is established in market standard documents in respect of which formal legal opinions have been obtained (usually by the trade association which has sponsored the document in question). The legal difficulties of netting have been somewhat eclipsed in recent months by the debate concerning the need for reform of the law surrounding the use of securities as collateral. Nonetheless, there seems to be consensus among market participants that the removal of all remaining legal uncertainties as to netting is necessary, especially if multilateral netting schemes are to be established in the context of clearing systems (for the legal efficacy of multilateral schemes presupposes the efficacy of each constituent bilateral relationship).

There is consensus that the removal of legal uncertainties as to netting is necessary, especially if multilateral netting schemes are to be established in the context of clearing systems.

Barrier 15: Uneven application of national conflict of law rules

Since almost all transactions involve some cross-border element, the laws of more than one jurisdiction are almost always relevant, and therefore an examination is required of the extent to which each legal system recognises the validity of the laws of the other. The possible permutations in which this question of conflicts of law arises can be daunting. However, it is helpful to identify the *core* conflict that causes problems and which recent legislative initiatives seek to address. It is where securities that are the subject matter of a transaction have been admitted into a settlement system and are duly recorded in its accounts. As mentioned above, some EU legal systems treat as different the ownership of a security outright and an entitlement (against a settlement system or intermediary) to own such a security. Others elevate such an entitlement to being equal to ownership of the underlying security. Where legal systems of both types are in play, there can an irreconcilable conflict. It seems to be unanimously accepted that only legislation can resolve this problem.

National differences in the legal definition of ownership of a security can cause difficulties in the application of conflict of law rules.

Recent legislative initiatives concerning the use of securities as collateral seek to address this type of conflict. These initiatives involve measures intended to promote (in those legal systems where it is not already the

case) an entitlement against a settlement system or intermediary in respect of a security to a status equivalent to the security itself. These measures use the notion of location. In circumstances where the security itself might under any other law be 'as issued' (i.e. the physical paper held by investors, or immobilised, or recorded in any account as being held on behalf of the system), it is deemed instead to be located in (i.e. to be the entitlement against) the system. The elegance of this solution is that the same deeming mechanism can be used in respect of 'lower-tier' accounts, so that the same rule can be applied to intermediaries, in respect of entitlements against them recorded in their own accounting systems. The application of the same solution to each and every level of accounts has prompted the name PRIMA (the Place of the Relevant InterMediary Approach) for this solution. For each account holder, the Relevant Intermediary is the next one up in the chain, and the security is deemed to be the claim against that intermediary, and thus subject to the legal system of the place where the account is held.[40] The legislative mechanism described here has the strong support of most financial market participants. It lies at the heart of (i) the *EU Settlement Finality Directive* (but applied only to securities offered as collateral to central banks and to settlement systems themselves); (ii) the *proposed EU collateral directive* (but applied only to securities offered as collateral); and (iii) the *proposed Hague Convention* (to be applied to all jurisdictions acceding to the convention).

Recent legislative initiatives seek to address this type of conflict by promoting an entitlement against a settlement system or intermediary in respect of a security to a status equivalent to the security itself.

The solution is not uncontroversial, however. Three comments may be made to assist putting it in perspective.

- First, the solution is based on a multiple legal fiction (an account is deemed to have a place, in which the claim against a system or intermediary is deemed to be the security).

- Secondly, the solution has the effect not only of deeming a security to have a particular location in one jurisdiction, but (of necessity) also of 'dislocating' it from another. The rights of owners of that security (e.g. to reclaim securities dishonestly transferred away from their ownership) will be altered from those arising under one legal system to those under another. If those rights were better under the law of the former, the owners will, by the 'dislocation', be disadvantaged.

  This factor should not allow the necessary law reform currently in train to be derailed. Whilst such reform may in certain circumstances (but not the generality of cases) favour systems and intermediaries over the investors on whose behalf those intermediaries act when there is a dispute about ownership of the securities, the reforms are needed in order to establish sound legal underpinning for existing market practices. Indeed, the reforms may be seen merely as recognition that the securities market (intermediaries and settlement

However, this solution is not uncontroversial...

[40] This solution pre-supposes that the location of every account is knowable. For settlement systems, this is unlikely to raise problems. However, when applied to intermediaries that maintain accounts for investors and/or other intermediaries on an international basis, the location of an account (and thus the deemed location of a security) may not be obvious. To solve this, it has been proposed to allow the intermediary and the account-holder to agree where the location (and thereby the security) is deemed to be.

systems) is of equal systemic importance to (or even part of) payment systems, for which the Settlement Finality Directive established legal soundness by way of 'finality' in 1997.

- Thirdly, the solution preserves the applicability of all 15 EU legal systems, albeit in an altered constellation, implying a need for participants to retain expertise in all 15 legal systems.

Moreover, the proposed solution is not the 'global' standard. Other possible approaches include the creation of a new type of security interest (as under Chapter 8 of the Uniform Commercial Code in the U.S.A.), the adoption of a model collateral law (as in certain emerging markets) or the creation of a new collateral instrument. These kinds of solution all identify a specific activity and then create a separate regime that is ring-fenced from the rest of the law in each state where that activity is to take place. Such an approach was considered by the European Financial Markets Lawyers Group (EFMLG) in its Proposal for an EU Directive on Collateralisation in June 2000. However, the EFMLG rejected proposing any legislation that would comprehensively change the legal characteristics of taking securities as collateral. The EFMLG noted that the creation by legislation of a special area of commercial activity, protected from the application of national insolvency laws, might be the optimal solution for the international financial markets as they operate within the European Union. However, such a proposal was considered to be too far-reaching, and not something that is likely to find immediate favour with the Member States.

... and there are alternatives, such as the approaches adopted in the United States and in some of the emerging economies

IV. Conclusion

In considering the barriers to efficient cross-border clearing and settlement, a distinction can be drawn between those barriers that can be removed by concerted action among market participants and others that can be removed only by government intervention. In this context, there is a consensus within the Group that the EU clearing and settlement landscape could be significantly improved by market-led convergence in technical requirements/market practice across national systems.[41] This would provide for inter-operability between national systems and could allow for a choice of systems to be used at each stage of a securities transaction. In other words, trading platforms, stock exchanges and their participants would be better able to interface with a variety of settlement systems, allowing market participants to choose to settle transactions in their preferred locations. Clearing systems and CCPs could also develop a capability to operate settlement in various locations. While direct remote access[42] to national clearing and settlement systems is already technically possible, many of the listed barriers remove it as a practical option.

Convergence in the technical requirements for and market practices in clearing and settlement across the EU seems feasible.

[41] Particular benefit could be gained by (i) implementation of real-time settlement in (and between) depositories; (ii) harmonisation of operating hours; and (iii) full dematerialisation of physical securities where possible under existing laws.

[42] Direct remote access can be defined as the ability to participate in or use the facilities of system located in another Member State, without the need to have legal presence in that Member State.

Market-led convergence in technical requirements and market practice for clearing and settlement could, therefore, deliver considerable benefits within a significantly shorter timeframe than that required for full system mergers. User agreements and/or market conventions could be used to achieve convergence in most of these areas, allowing the national authorities to concentrate on removing the other barriers in the fields of taxation and legal certainty. However, the need for EU legislation to remove technical/market-based barriers cannot be ruled out entirely. Such intervention could prove unavoidable as a means to overcome national sensitivities and/or the perverse incentives that exist for entities that profit by arbitraging inefficiencies in cross-border clearing and settlement.

... and could deliver considerable benefits within a significantly shorter timeframe than that required for full system mergers.

On the other hand, the removal of barriers related to taxation is a clear responsibility of the public sector. As already indicated, many tax-related barriers would lose relevance in the event that investors were free to choose the location of their securities holdings – and by extension to choose their preferred tax regime. However, there remains a convincing argument in favour of harmonising the procedures for collecting and refunding tax receipts in respect of securities as a further means to facilitate the integration of EU financial markets.

National governments are responsible for the removal of tax-related barriers and should take the necessary action.

Barriers related to legal certainty reflect more fundamental differences in the concepts underlying national laws and would appear more difficult to remove than barriers in the other categories. Nevertheless, a partial solution seems to be available in the proposed EU Directive on collateral management. National governments should ensure the earliest possible adoption of this Directive and its rapid transposition into national law.

Barriers related to legal certainty are difficult to remove but could be eased by the proposed EU Directive on collateral management.

Annexes I-VI

Annex I

List of Participants in Giovannini Group Discussions on Report[43]

Mr. Alberto Giovannini, (chairman)	Unifortune Asset Management SGR
Mr. Alastair Ballantyne	Morgan Stanley Dean Witter
Mr. Fred Barnes	Oxera
Mr. Emilio Barone	San Paolo IMI
Mr. Danilo Battistelli	Cassa di Compensazione e Garanzia
Mr. Marc Bayle	European Central Bank
Mr. Clive Bergel	Bergel International Consultant LLC
Mr. John Berrigan	European Commission
Mr. Graham Bishop	GrahamBishop.com
Mr. Niall Bohan	European Commission
Mr. Lars Boman	European Commission
Mr. Christophe Bourdillon	CDC IXIS Private Equity
Mr. Gilles Breyse	CDC IXIS
Mr. Tony Buche	Clearstream International
Mr. John Burke	London Clearing House
Mr. Hervé Carré	European Commission
Mr. James Chrispin	PriceWaterhouseCoopers
Mr. Kjeld Christensen	VP (Denmark)
Mr. Nicholas Collier	INSTINET
Mr. Joe Corcoran	Barclays PLC
Mr. Paolo D'Amico	Banca di Roma
Mr. Clifford Dammers	IPMA
Mr Godfried De Vidts	Fortis Bank
Mr. Olivier Dudoit	Euonext
Mr. Edward Duncan	Goldman Sachs International
Mr. Darren Fox	European Securities Forum
Ms. Christa Franke	Deutsche Börse
Ms. Christine Gerstberger	European Commission
Mr. John Gilchrist	REGEN Sarl
Mr. Paul Goldschmidt	European Commission
Mr. Jean Granoux	Crédit Agricole
Mr. Wim Hautekiet	Clearstream International
Ms. Marye Humphery	Morgan Stanley
Ms. Henny Kapteijn	ABP Investments
Mr. Elias Kazarian	European Central Bank
Mr. Pen Kent	European Securities Forum
Mr. Andrew Lamb	London Clearing House
Mr. Karl Lannoo	CEPS
Mr. Giuseppe Lazzari	Monte Titoli S.p.A
Mr. Mattias Levin	CEPS
Mr. Mc Ging	European Commission
Mr. Ramón Martínez	Banco Bilbao Vizcaya Argentaria SA
Mr. Paul Mercier	European Central Bank

[43] Participants in the Group's work do so in a personal capacity and not as representatives of their institution or organisation.

Mr. Marko Mrsnik	European Commission
Mr. Eugenio Namor	Banca Commerciale Italiana
Mr. Jose Maria Narvaez	Iberclear
Mr. Ivan Nicora	Euroclear Bank
Mr. Kudwig Niessen	Wiener Börse
Mr. Albert Nijenhuis	European Commission
Mr. Patrick Poncelet	European Banking Federation
Mr. Yves Poullet	Euroclear France
Mr. Simon Powell	Deutsche Bank
Mr. Gregor Pozniak	Fed.of Europn. Securities Exchanges
Mr. Antonio Pulido	BBVA SA
Mr. George Richardson	Goldman Sachs International
Ms. Daniela Russo	European Central Bank
Ms. Delphine Sallard	European Commission
Mr. Michael Sammons	Goldman Sachs International
Mr. Stephan Schuster	Deutsche Bank AG
Mr. Hugh Simpson	CRESTCo
Mr. Al-Harith Sinclair	European Securities Forum
Ms. Valentina Stadler	Hypovereinsbank
Mr. John Tanner	London Stock Exchange
Mr. Martin Thomas	Financial Law Panel
Mr. Frederik Von Dewall	ING
Mr. Charles Vuylsteke	Clearstream International
Mr. Paul Watkins	Clearnet/Euronext
Mr. John Watson	European Commission
Mr. Edward Wells	London, Stock Exchange
Mr. David Wright	European Commission
Ms. Elizabeth Wrigley	European Commission
Mr. George Zinner	Oesterreichische Kontrollbank

Annex II

Mandate for Working Groups on EU Cross-Border Clearing and Settlement

It is proposed to establish three working groups on EU cross-border clearing and settlement in the markets for equities, bonds and derivatives. There will be a common mandate for each of the working groups, which will have three parts:

i. to analyse the current situation (including institutional set-up) for cross-border clearing and settlement in the market concerned.

For this part of the mandate, it will be necessary to differentiate between the various functionalities involved (i.e. clearing, settlement, depository) while explaining clearly the linkage between them. These functionalities are market services, provided in an environment that is characterised by rules (of a regulatory, legal and fiscal nature), contracts and technology. The objective of the analysis will be to clarify how these services are provided across borders and how provision is affected by differences in the rules applied, in the contractual relations involved and in the available technology. In this context, the analysis should be supplemented by canonical examples that would highlight the main difficulties in cross-border transactions.

More specifically, the analysis would describe in detail: (i) the existing infrastructure (legal, technical and market structure) for cross-border clearing, settlement and depository functionalities in the market concerned and its historical evolution; (ii) the governance of those institutions that form this infrastructure; (iii) any regulatory/legal/taxation obstacles that exist to cross-border clearing and settlement; and (iv) the current and prospective role of technology in providing clearing, settlement and depository functions. In describing current arrangements, it would be useful to highlight aspects that may be unique to the market concerned. (A questionnaire will be provided to assist the working groups in their analysis.)

ii. to consider the requirements against which the efficiency of possible alternative arrangements for clearing, settlement and depository services can be assessed

The efficiency of possible alternative arrangements for each of the functionalities will need to be assessed on a consistent and objective basis. This can be achieved most effectively by establishing a set of requirements for an efficient arrangement for each functionality in each market. As the purpose of the Giovannini Group is to inform the policymaking of the Commission, these requirements would reflect a definition of efficiency that goes beyond the narrower interests of owners and users to include wider public-policy interests also. Many such requirements can be identified from recommendations made in the report of the CPSS-IOSCO Joint Task Force on Securities Settlement Systems (January 2001). The CPSS-IOSCO recommendations focus on the settlement of intra-country trades and there is no specific consideration of cross-border aspects. Nevertheless, on the basis of the CPSS-IOSCO recommendations, a set of requirements for efficiency in cross-

border clearing, settlement and depository arrangements can be established. These requirements would include:

- lower costs/better quality of service to users;
- adequate investor protection (e.g. the new arrangement would provide clear legal framework for transactions, minimise investor risks at various stages of transaction, ensure full transparency of investor risks);
- adequate competition (i.e. the new arrangement would assure fair and open access to potential users and ensure sufficient incentive to innovate);
- acceptable level of systemic risk (e.g. the new arrangement should offer maximum opportunity for netting, should provide for adequate supervision and oversight)
- governance arrangements (i.e. the new arrangement should be able to reconcile interests of owners, users and public policy).

iii. to identify some possible alternative arrangements for clearing, settlement and depository functionalities.

In this part of the mandate, the objective would be to identify a small number (2 or 3) of possible alternative arrangements for clearing, settlement and depository functionalities. A possible set of alternative arrangements would be (i) a centralised pan-EU utility for clearing, settlement and depository functionalities; (ii) a centralised pan-EU clearing counterparty with multiple settlement systems and depositories; and (iii) multiple vertically integrated clearing, settlement (and depository) "silos" linked to ensure pan-EU coverage. Each of these alternative arrangements would then be examined so as to illustrate how the requirements in (ii) would apply.

Annex III

An Alternative Perspective on the Cost Structure of Cross-Border Settlement in the European Union

The analysis in Section 4 of the report focuses on the additional direct cost of settlement across borders relative to the corresponding services for a domestic transaction. i.e. the extra amount paid for the settlement service provided. The direct cost is, of course, only one element of the additional costs of cross-border settlement. Other observable elements are the additional indirect costs associated with the more extensive back-office support required by the users of settlement services across borders and the need to employ the services of local agents. These indirect costs arise because of the absence of harmonised processes in the various segments of the EU market (as listed in Section 5). Indeed, most of the substantial differential between the settlement cost in using an ICSD and the settlement cost in using a national CSD – as identified in Section 4 – can be attributed to the fact that ICSDs internalise many of these additional indirect costs on behalf of their clients.

While the additional indirect costs of cross-border settlement are in principle observable, a detailed analysis would require access to the managerial accounts of the investors and intermediaries concerned. However, tentative assessments of the relative importance of the direct and indirect settlement costs in cross-border transactions have been provided by Euroclear and Clearstream - the two ICSDs whose activities focus mainly on the settlement of cross-border transactions. Both assessments conclude that the scale of direct costs of cross-border settlement is small relative to the indirect costs. However, the implied breakdown of costs between direct and indirect sources differs substantially between the two assessments. This may be explained partly by the fact that they are grouping cost elements differently but the wide difference also suggests uncertainty about the size of different cost elements. Accordingly, both estimates are reported without reconciling the analyses or choosing between them.

Chart A: Breakdown of Cross-Border Settlement Cost (Euroclear)

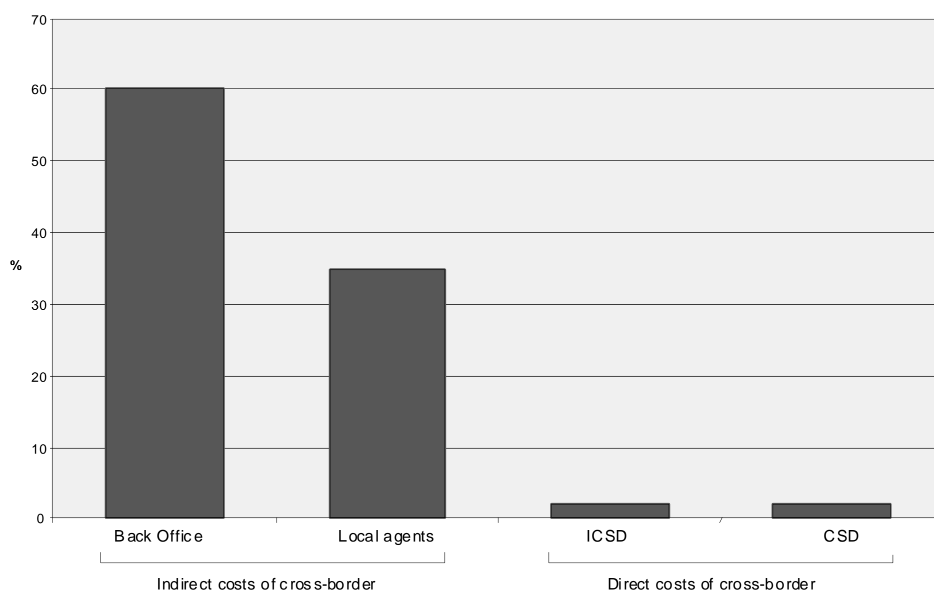

Chart A presents the main findings of Euroclear's assessment of cross-border settlement costs.[44] According to this assessment, the direct cost of a cross-border settlement (i.e. the cost strictly linked to the settlement of the transaction by the ICSD and the national) represents only 4 per cent of the total cross-border settlement cost. The bulk of the cost is indirect and relates to the need to maintain extra back-office facilities and to employ local agents. The breakdown in the share of these indirect costs (which in many cases are either out-sourced by using a global custodian or an ICSD) has been estimated as about 60 per cent for additional back-office facilities and about 35 per cent for the use of local agents.

Chart B: Breakdown of Cross-Border Settlement Cost (Clearstream)

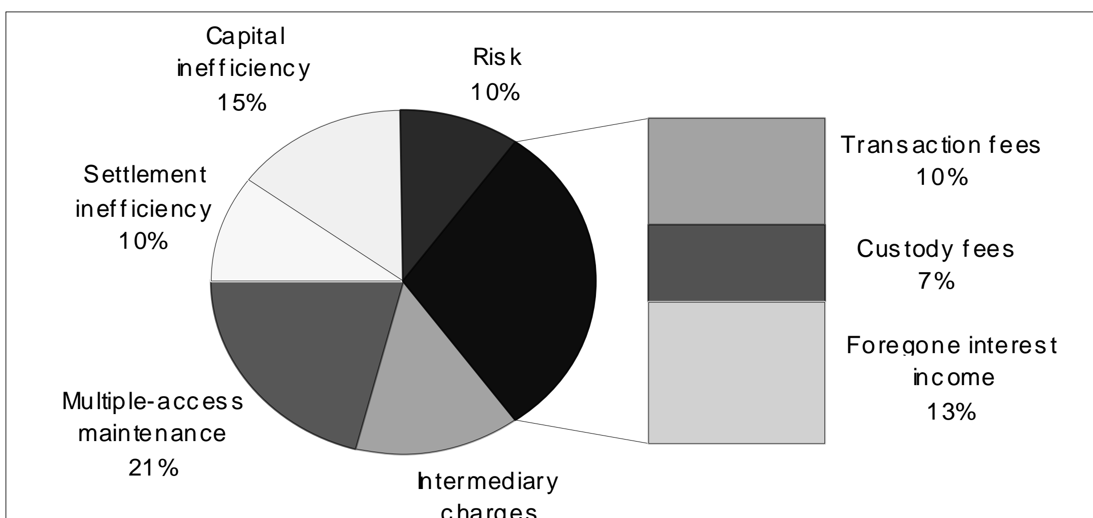

Chart B presents the main findings of the Clearstream assessment of cross-border settlement costs. The Clearstream assessment differs from that of Euroclear insofar as it provides estimates for the less observable costs of cross-border settlement such as additional risk and efficiency losses. According to the Clearstream assessment, about 30 per cent of the total settlement cost is linked to the services provided by CSDs or ICSDs; however, this share includes not only costs strictly related to settlement but also custody fees and foregone interest income. The combined cost of intermediaries and of maintaining multiple interfaces with different settlement systems is estimated to be 35% of total. The loss of settlement inefficiency is estimated at 10% of total cost, the loss of capital efficiency is estimated at 15% and additional risk is estimated at 10%.

[44] As Euroclear is a large customer of the local agents, the fees that Euroclear pays are likely to be lower than the fees that smaller and more typical end-users pay. Euroclear's systems are also likely to be more complex and expensive, as Euroclear is dealing with several CSDs, markets and instruments. Therefore, the costs faced by a typical end-user are likely to be more evenly divided between back-office and local agents.

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Annex IV

GIOVANNINI GROUP

Questionnaire on cross-border clearing and settlement in the European Union

Name:…………………………………………………………………………..……..……

Position:………………………………………………………………………………

Company:……………………………………………………………………...……

User group (investment bank, custodian etc.):………………………………….

Which market(s) do you focus on:…………………………………………..……

Please forward your responses before 4th May 2001

by e-mail to: c&squestionnaire@cec.eu.int

by fax to: 32.2.299.3503

by mail to: European Commission,
Ms Triantafila Stratakis
Rue de la Loi 200 (Office BU1 02/39),
B-1049 Brussels

1. Introductory remarks

In preparing a report on EU cross-border clearing and settlement arrangements, the Giovannini Group has established three working groups. The working groups will analyse the current situation in the markets for equities, fixed income securities and derivatives, respectively. This questionnaire will assist the working groups in their analysis.

The questionnaire focuses on market characteristics, potential obstacles to efficient clearing and settlement across borders, and market/public priorities for future development of the clearing and settlement infrastructure. The questionnaire applies **only to transactions within the European Union** and each of the questions should be considered in relation to the particular market concerned. If appropriate, a separate questionnaire should be completed in relation to each market.

It is important that the questions are answered as fully as possible and, where possible, illustrated with specific examples. The questionnaire is provided for guidance and is not meant to be exhaustive. Accordingly, **respondents are invited to go beyond the contents of the questionnaire when providing their analyses**.

2. Analysis of the current environment

2.1 Market characteristics

Table 1 (Page 10) should be completed with a view to identifying the defining features of the market concerned. For example, is it a market where the transactions are typically high value? What categories of institution are active in the market and what is their geographical distribution? Are the exposures generated sensitive to market movements? How long do such exposures typically last? Responses should relate to the typical characteristics of markets in an orderly, efficient state, *ceteris paribus,* rather than attempting - at this stage - to draw conclusions in terms of cross-border clearing and settlement. (For example, the underlying purpose of a transaction may

call for intra-day settlement, but this might not currently be available in a cross-border context.)

2.2 General considerations in cross-border clearing and settlement

a) When settling cross-border securities trades, which type(s) of arrangements are most commonly employed in the relevant product area?:

- Direct membership by non-resident counterparty in settlement system of country of security issuance;
- Reliance on local agent/custodian;
- Use of global custodian;
- Settlement through an ICSD;
- Reliance on links between CSDs;
- Other (e.g. bilateral settlement outside CSD/ICSD).

Where appropriate, please distinguish between arrangements used for the securities and cash legs of transactions. If your institution makes use of more than one of the arrangements listed above, please indicate what factors determine the method used (e.g. products involved, location of securities, location of counterparty, etc)

b) What, if any, are the additional risks (custody risk, operational risk, credit risk, liquidity risk, legal risk) involved when undertaking cross-border transactions in the products under consideration? Please describe the nature of these additional risks and rank them in descending order of importance.

2.3 Obstacles to cross border clearing and settlement

When identifying obstacles or additional costs arising for particular instruments or transactions or activities, please indicate which stage in the clearing/settlement chain

is (most) affected[45], and whether barriers to cross-border clearing and settlement of securities trades are surmountable/insurmountable. If such barriers are surmountable, at what cost? In your view, is legislative intervention needed or can user agreements/market conventions be used to overcome these problems?

2.3.1 Market Practice/Technical

a) Please indicate which of the following factors represent a significant obstacle to efficient cross-border settlement?

Obstacle	***Minor cost impact***	***Major cost impact***	***Prohibitive***
Definitions of securities themselves;			
Issuance practice;			
Application of voting rights;			
Obligations of holders;			
Status of overseas holders;			
Variations in standard settlement periods;			
Operating hours of systems			
Timing of intra-day settlement finality;			
Need to maintain membership of multiple systems			
Diversity of IT platforms, interfaces, lack of STP;			
Membership and information requirements			
Rules governing corporate actions (including processing of dividend payments, rights issues etc.).			
Other (please specify).			

[45] i.e. whether the obstacle impacts at the level of central counterparty, netting, transfer of securities,

b) For which types of activities/transactions are the identified obstacles most prevalent?

c) Which of the obstacles identified have their origin in legal provisions and which are caused by variations in market rules, practices and standards?

2.3.2 Restrictions on choice of (settlement) systems:

a) Are respondents aware of any national listing/issuance/registration requirements or stock exchange rules that restrict issuer's choice of CSD from which securities can be held/distributed/settled? If so, please specify the nature of such requirements/rules and where they apply.

b) Are respondents aware of any national requirements and/or exchange rules that require market participants (investment firms, inter-dealer-brokers, market-makers) to use the offices of the clearing system/CSD of the exchange where the trade is executed? If so, please specify the nature of such requirements/rules and where they apply.

c) Do you consider either of the above types of restriction justified by operational/efficiency or legal certainty considerations?

2.3.3 Remote Access[46]

a) What arrangements do host country central counterparties/clearing houses put in place with regard to non-resident institutions (in respect of admission to membership, capital adequacy controls, margining etc.)? In your view, do these arrangements

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transfer of cash, custody, etc.

[46] Article 15(1) ISD provides that "investment firms .. can, either directly or indirectly, become members of or have access to the regulated markets in their host member states where similar services are provided and also become members of or have access to the clearing and settlement systems which are provided for the members of such regulated markets there." The right to execute transactions on a remote basis on a regulated market in another Member State has as a corollary, the right to benefit from

constitute a disproportionate or arbitrary restriction on access to these services for non-resident institutions?

b) What arrangements do national CSDs/ICSDs put in place with regard to non-resident institutions? Do these entail higher fees or other indirect costs for non-resident institutions? Do you consider access criteria transparent, fair and non-discriminatory?

c) What steps does a non-resident institution have to take in order to be able to pay cash against delivery of securities to its account in the host country CSD? Please specify the category of institution referred to (bank, investment firm, etc).

d) Are non-resident institutions required to rely on the services of local custodians and/or correspondent/settlement banks for indirect access to clearing and/or settlement systems? If yes, does this entail significant extra costs?

e) Are there additional, technical difficulties relating to remote access (separate from any legal/regulatory barriers)? If so, how significant are these and how can they be overcome?

2.3.4 Legal certainty/collateral issues in cross-border trades:

a) For cross-border transactions, is there sufficient clarity about which laws govern each stage of the transaction post execution up to settlement? Are cross-border collateral transfer arrangements in respect of multilateral systems (CCP/clearing, SSS, payment systems) now legally secure (perfectible/clarity on applicable law)? If not, what is the nature of any remaining risk for these systems?

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all central counterparty/clearing facilities, and to settle (including cash payment against delivery) through host country CSD.

b) Which products and transactions are most exposed to legal uncertainty regarding bilateral close-out netting? Would resolution of these uncertainties affect market interest in use of multilateral clearing/netting arrangements?

c) Do national laws governing custody and transfer of securities impact on the ability to hold and transfer securities abroad? In what respects? Are these laws appropriate for dematerialised securities held by chains of intermediaries and transferred electronically?

d) Does the nature of the security involved (dematerialised or immobilised/ registered or bearer) affect the complexity of undertaking a cross-border transaction? In what ways?

2.3.5 Tax obstacles

a) Do national regimes for the application of withholding tax or withholding tax relief differ between Member States? In what ways and for which classes of security? How do these differences impact on the ability to hold and manage securities cross-border?[47]

b) Do differences in capital gains tax regimes (thresholds etc) impact on the ability to hold and manage securities cross-border?

c) Do transaction taxes (e.g. stamp duty) act as a deterrent to any types of transactions or affect the location of business?

3. Requirements for the future

3.1 Market priorities for future development of C&S infrastructure

Table 2 (page 11) should be completed to identify for each market what are the most significant drivers for change to the current EU clearing and settlement infrastructure.

Please rank the factors in the left-hand column of each table in order of priority for the market concerned (where 1 is your highest priority). In other words, can the greatest gains be made through risk reduction, or improved settlement times, or greater legal certainty, etc?

The later categories in the table are intended to identify where the significant costs and inefficiencies arise for each market in the current environment. These could include for example:

- dead-weight costs of cross-border settlement (measured by excess fees relative to comparable domestic transactions).

- back-office costs of having to interface with a number of different settlement systems.

- costs/inefficiencies resulting from factors such as inability to pool collateral in a single location, delayed settlement, additional manual intervention or involvement of intermediaries.

Please indicate whether your institution would also benefit from the ability to offset margin requirements across products/markets.

3.2 <u>Public policy priorities</u>

The technical, cost and investor risk reduction aspects of future consolidation in infrastructure for clearing and settlements cannot be considered in isolation. The next set of questions addresses the potential public policy angles and externalities of any future infrastructure model.

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[47] Differences could relate to the paperwork involved and information required (including whether it is required once only or for every payment), whether there is tax relief at source or through refund, the

3.2.1 Competition and efficiency

a) If legal and tax barriers to competition between clearing and settlement infrastructures were eliminated, what type of technical improvements would be required to enable this competition to take effect? Which structural arrangements would be most propitious to the emergence of open competition?

b) Would you consider it appropriate to have competition between all types of infrastructure providers, or are there countervailing arguments at any or all of the stages in the clearing/settlement chain?

c) In your view, is there a "business case" for system providers/users to undertake the necessary investment to upgrade system linkages in the product area under consideration? In other words, would the potential benefits outweigh the costs of adaptation of systems?

3.2.2 Governance

a) How does the governance of institutions affect their ability to move towards a new EU infrastructure? Do these considerations materially influence the case for "profit"/non-profit" structures? Are the arguments different for central counterparties and settlement systems/CSDs?

b) In your view, should systems be owner-run or user-run? If the former, should there be restrictions on those allowed to own infrastructure providers? If the latter, what is the correct balance of large players vs small in management structures and voting rights? If neither, what model should be used?

3.2.3 Risk profile of consolidated infrastructures

a) Are there any additional risks (or qualitative increase in existing risks) inherent in a scenario where one or more large CCPs or centralised CSDs serve trading systems across Europe? If so, please indicate the nature and significance of these

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period for which relief can be claimed, need to use local agent, etc.

additional/increased risks (e.g. operational, credit/counterparty, liquidity, systemic)? Please identify and prioritise for central counterparty and/or clearing, settlement systems in your product area.

b) Please indicate how important you believe intra-day finality and/or delivery versus payment are for the market(s) concerned. If the answer is different for different markets, please explain the reasons for that variation.

TABLE 1

CHARACTERISTICS OF THE SECURITIES MARKETS

(See Section 2.1 for background)

	Equity Market	Bond Market	Secured money market	Derivatives market
Typical value of a trade*				
Volume of trades*				
Category of key market players				
Traditionally domestic or international market?				
Volatility of credit exposures*				
Typical period of exposure				
Number of participants				
Number of issues				
Standardisation of products				
Standard settlement cycle / urgency (T+)				

* Please provide a figure where possible, or indicate whether high or low.

TABLE 2

PRIORITIES FOR FUTURE DEVELOPMENT OF SECURITIES INFRASTRUCTURE

Please rank in order of priority from your perspective (where 1 is highest priority)

	Equity market	Bond market	Secured money market	Derivatives market
Reduce counterparty risk				
Reduce balance sheet exposure				
Reduce number of settlement transfers				
Offset margin requirements in separate countries				
Achieve post-trade anonymity				
Reduce legal risk				
Harmonise market conventions for cross-border transactions				
Reduce settlement periods for cross-border transactions[48]				
Increase frequency of batch settlement /need for real-				

[48] Please indicate whether intra-day finality in cross-border settlements is a priority for the market in question.

time settlement				
Reduce/remove manual intervention in cross-border settlements				
Reduce involvement of intermediaries in cross-border settlements				
Reduce/remove need to be member of multiple CSDs/ use multiple custodians				
Reduce settlement system transaction and membership fees				
Reduce custody charges				

Annex V

RESPONDENTS TO THE QUESTIONNAIRE ON EU CROSS-BORDER CLEARING AND SETTLEMENT ARRANGEMENTS[49]

ABN AMRO Management Services Limited, U.K.
APCIMS (Association of Private Client Investment Managers and Stockbrokers), UK
Artesia Banking Corporation (Dexia Group), Brussels
BANK Austria AG/Creditanstalt AG
BARCLAYS, UK
BBVA, Spain
Banca IMI S.p.A., Italy
CDC IXIS, France
Central Securities Depository S.A., Greece
Citibank, N.A.
Clearstream
Crédit Lyonnais, Luxembourg
CRESTCO Ltd., UK
Credit Suisse First Boston (Europe) Limited, UK
Deutsche Bank AG, Germany
Dresdner Bank AG, Dresdner Kleinwort Wasserstein
EACH (European Association of Central Counterparty Clearing Houses), Austria
Euroclear Bank
Euronext/Clearnet
Federation of German Cooperative Banks, Germany
Fortis Bank Brussels
Goldman Sachs International
Halifax plc, UK
Hamburgische Landesbank-Girozentrale, Germany
HEX Plc, Finland
HypoVereinsbank, Germany
IBERCLEAR, Spain
London Stock Exchange, UK
Morgan Stanley International Limited
Nomura International plc, UK
SANPAOLO IMI S.p.a., Italy
Société de la Bourse de Luxembourg S.A.
Société Générale, France
UBS AG, Switzerland
Værdipapircentralen A/S (The Danish Securities Centre)
VPC AB, Sweden

[49] The names of two respondents have been withheld on request.

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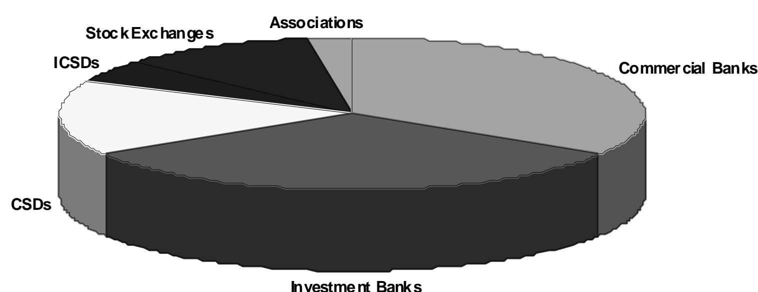
Annex VI

SUMMARY OF RESPONSES TO THE GIOVANNINI GROUP QUESTIONNAIRE

I. NUMBER AND ACTIVITY OF RESPONDENTS

The questionnaire (see Annex IV) was published on the Commission website on 2 April 2001. In the following two months, a total of 38 responses were received from institutions involved in all stages of the clearing and security settlement process and operating from various Member States. (The respondents are listed in Annex V.) Chart A presents a breakdown of respondents by activity. The bulk of respondents came from the banking sector, i.e. 13 commercial banks and 12 investment banks. Responses were also received from 6 national CSDs, both of

Chart.A : Breakdown of Respondents by Activity



the ICSDs, 4 stock exchanges and an association of investment managers.

II. IDENTIFICATION OF BARRIERS

In Section 5 of the report, the barriers to efficient cross-border clearing and settlement in the EU are categorised under three headings, i.e. those relating to technical requirements/market practice, taxation and legal certainty respectively. In all, 15 barriers have been listed under the three headings as follows:

Technical requirements/market practices

- Diversity of IT platforms/interfaces;
- Need to maintain multiple membership of settlement systems;
- National differences in rules governing corporate actions;
- Differences in the availability/timing of intra-day settlement finality;
- Impediments to remote access;

- National differences in settlement periods;
- National differences in operating hours/settlement deadlines;
- National differences in securities issuance practice;
- Restrictions on the location of securities; and
- Restrictions on the activity of primary dealers and market-makers.

Taxation

- Withholding tax procedures disadvantaging foreign intermediaries; and
- Tax collection functionality integrated into settlement system.

Legal certainty

- National differences in the legal treatment of securities;
- National differences in the legal treatment of bilateral netting; and
- Uneven application of conflict of law rules.

All of the respondents identified barriers in each of the three categories. All of the 15 individual barriers listed (together with a set of broader tax-related barriers) were identified by at least one of the respondents to the questionnaire. However, the number of respondents identifying each barrier varied significantly. Chart B presents the distribution of responses across the 15 barriers in descending order. The main conclusions to be drawn are:

a) The vast majority of the 15 barriers listed was identified by at least half of all respondents to the questionnaire;

b) The category of barriers related to technical requirements/market practices was the most frequently cited by respondents. The eight most frequently cited barriers come from this category. Although the remaining two barriers in this category (i.e. impediments to remote access and restrictions on the activities of primary dealers), were less cited by respondents, this may reflect the fact that they can be considered as specific cases of the other technical barriers. Moreover, the identification of restrictions on the activities of primary dealers/market makers was unprompted since such restrictions were not mentioned explicitly in the questionnaire;

c) The prevalence of barriers relating to technical requirements/market practices among those identified by respondents may well reflect their relative importance to market participants. However, it may also reflect the extent to which these barriers are more frequently encountered or better understood than those relating to taxation and legal certainty.

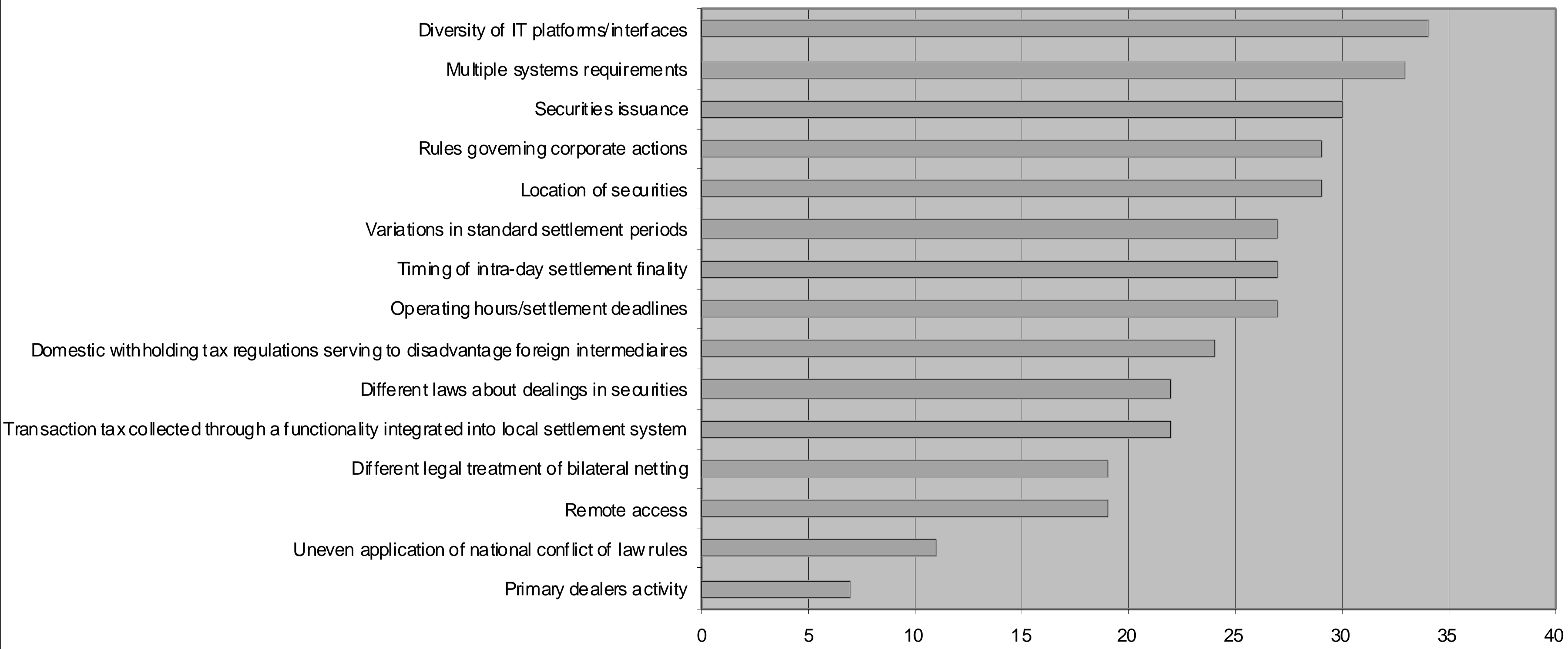


Chart B: Number of respondents per barrier
Diversity of IT platforms/interfaces
Multiple systems requirements
Securities issuance
Rules governing corporate actions
Location of securities
Variations in standard settlement periods
Timing of intra-day settlement finality
Operating hours/settlement deadlines
Domestic withholding tax regulations serving to disadvantage foreign intermediaires
Different laws about dealings in securities
Transaction tax collected through a functionality integrated into local settlement system
Different legal treatment of bilateral netting
Remote access
Uneven application of national conflict of law rules
Primary dealers activity
0
5
10
15
20
25
30
35
40

d) The most frequently cited barrier was diversity in IT platforms/interfaces, followed by the requirement of multiple memberships of systems. Both of these were identified as a problem by more than 30 of the 38 respondents;

e) More than 25 respondents identified differences in securities issuance practices, differences in the rules governing corporate actions, restrictions on the location of securities, variations in settlement period, the availability of intra-day settlement, and differences in operating hours/settlement deadlines as barriers;

f) More than 20 respondents identified restrictions on agents for the withholding tax, differences in the legal treatment of securities and the integration of the tax functionality into the CSD as barriers;

g) More than 15 respondents identified differences in the legal treatment of bilateral netting, remote access and differences in the supervision of clearing and settlement as barriers;

h) Fewer than 15 respondents identified the remaining two barriers – uneven application of national conflict of law rules and restrictions on the activities of primary dealers/market makers as barriers.

III. Relative costs of barriers relating to technical requirements/market practices

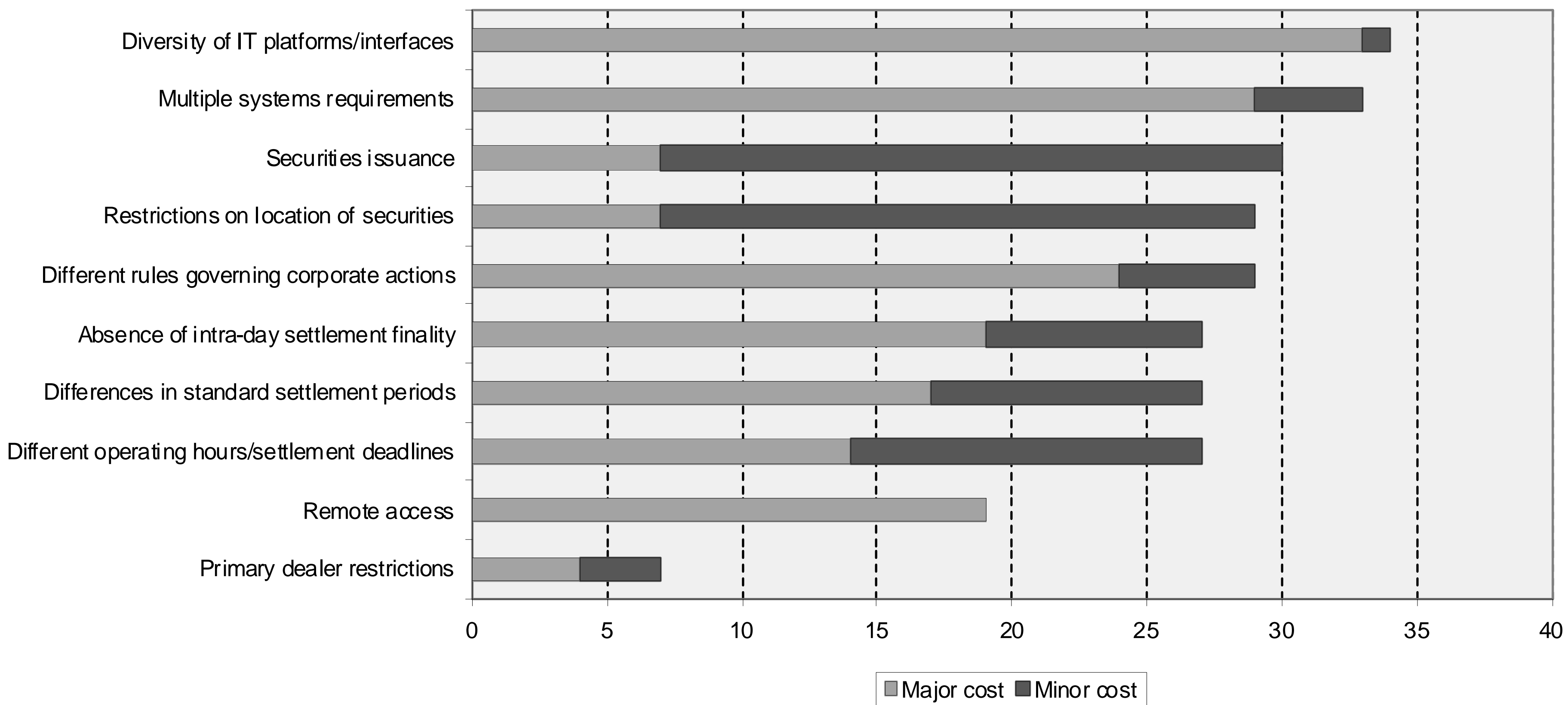
From the responses to the questionnaire, it is possible to ascertain whether the 10 barriers related to technical requirements/market practice are perceived as imposing a major or a minor cost on users of cross-border clearing and settlement services. Chart C presents the cost assessment of respondents for each of these barriers. Responses to the questions on barriers related to taxation and legal certainty were more general and so perceptions of the relative cost of these barriers are not so clear. The following main conclusions can be drawn from Chart C:

(a) National differences in information technology/interfaces and the need to maintain multiple membership of CSDs were not only the most frequently cited barriers but were also among the barriers most perceived as a major cost. Of those respondents citing these barriers, 94% and 89% respectively regarded them as a major cost. Only impediments to remote access – which was cited much less frequently as a barrier - received a higher rating (100%) as a major cost to users.

(b) While different practices in securities issuance and restrictions on the location of securities were cited relatively frequently, only a minority (less than 25%) of the respondents concerned perceive them as a major cost.

(c) In contrast, the remaining barriers relating to technical requirements/market practice were less frequently cited but were all perceived as a major cost by more than 50% of those respondents concerned.

Chart C: Cost assessment of barriers relating to technical requirements and market practice



IV. PRIORITY OF BARRIERS

The sequence in which the barriers in each category are listed in Section 5 reflects a priority rating that has been established on the basis of responses to the questionnaire. In respect of barriers related to taxation and legal certainty, the priority rating simply reflects the number of respondents citing each of the barriers concerned as indicated in Chart 5A. In respect of the barriers relating to technical requirements, the priority has been established by combining the number of respondents citing each barrier with the relative importance attached to the barrier in terms of cost.[50] Chart D lists the barriers by priority under each of the three headings.

[50] Thus, the priority assigned to a specific barrier is based an index number which is derived as the product of two percentages, i.e. the percentage of the 37 respondents that has cited the specific barrier and the percentage of those citing the barrier who regard it as a major cost.

Chart D: Priority rating for barriers relating to technical requirements and market practice