

New Structure for Clearing and Settlement Systems in the EU

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Introduction

The European Union (EU) has set itself the strategic goal of integrating its capital markets by 2005. Until recently, priority was given to streamlining trading operations. It has now been generally recognised that post-trade processing, i.e. the clearing and settlement of securities trades, is also an important strategic element in the integration of capital markets. For a given level of trading costs, lower post-trade transaction costs can be expected to increase market liquidity and thus to provide corporates with easier access to securities markets.

With the growing number of cross-border trades, concern has arisen about the overly fragmented nature of the EU securities clearing and settlement industry. Several studies have shown that the settling of cross-border trades within the EU is several times more expensive than the handling of a local trade between local participants⁽¹⁾.

Although there is today a general consensus that the solution should be market driven, public authorities must join in this debate. First, the organisation of an efficient infrastructure for settling cross-border trades throughout the EU will require the removal of existing barriers to competition. Second, cross-border settlements do raise specific financial stability issues. They are more complex and potentially more risky. Moreover, when the settlement of trades becomes more concentrated, overseers and supervisors need to keep a closer eye on the system involved, as any disruption could have a bigger systemic impact.

The debate on the future of the securities clearing and settlement industry is often animated, with players defending their own interests. Some custodians

argue that (International) Central Securities Depositories ((I)CSDs) should not provide settlement services except for limited securities safekeeping and settlement functions, thus de facto advocating the splitting off of the settlement-enhancing banking functions exercised by these entities. Exchanges that own the settlement system through which their trades pass are said to be liable to let their own interests prevail over those of the settlement system users. In this paper we will try to discuss the legitimacy of such statements and see if adequate solutions are available for the issues raised.

This note is structured as follows. The first chapter looks at the current organisation of post-trade processing functions and identifies which institutions are involved in the clearing and settlement of both domestic and cross-border trades. The forces for change in the actual EU clearing and settlement environment are also described. Chapter two discusses efficiency criteria for an efficient EU securities clearing and settlement industry while chapter three looks at soundness criteria with regard to the industry. Finally, a conclusion is presented.

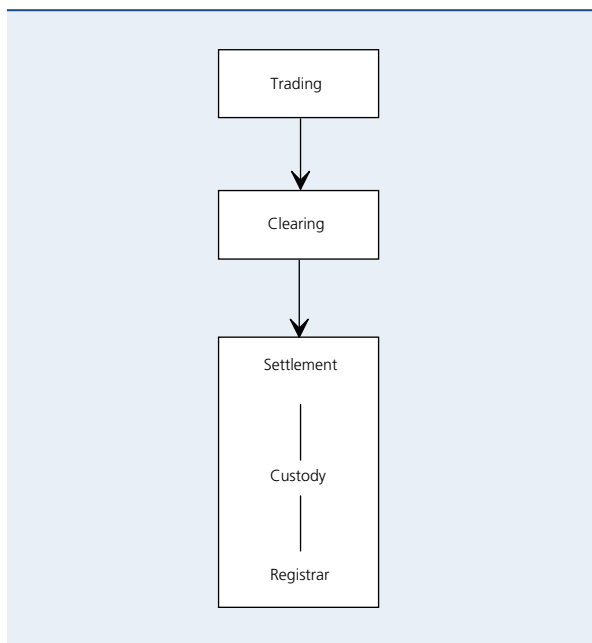
1. Current organisation of post-trade processing

1.1 Market functions

The processing chain of a securities transaction involves several steps (Chart 1). After the conclusion of a transaction, a number of post-trade operations takes place. They

(1) See e.g. Lannoo, K. and Levin, M. (2001).

CHART 1 THE SECURITIES TRADE PROCESSING CHAIN



Source : NBB.

always involve settlement, but an intermediary phase, the interposition of a central counterparty, might also be foreseen. Settlement presupposes the holding of cash and securities, the latter requiring a registrar function.

1.1.1 Trading

A securities trade is concluded between a buyer and a seller by agreeing on the security's price and the volume sold. The trade can be executed in an exchange, a system that is designed to optimise the price-discovery process and to concentrate liquidity, and where the trading usually takes place anonymously. Sometimes, however, a market which functions bilaterally over the counter (OTC) proves to be the most effective solution. In both cases, buyers and sellers can act for their own account or for their client's account.

1.1.2 Clearing

The clearing of a trade generally means that the obligations of the buyer and the seller are established. The counterparty risk that the buyer and seller incur vis-à-vis each other can be standardised. To this end, a clearing house may interpose itself as a central counterparty (CCP) after the conclusion of the trade, becoming the buyer counterparty for the seller and the seller counterparty for the buyer.⁽²⁾ Legally speaking, novation takes place. Both

original parties – either directly or indirectly via a CCP member – now have a claim on the CCP, a specialised entity that is subject to stringent risk management. This intervention is all the more important when the original counterparties have concluded the trade through an exchange or a trading system which guarantees anonymity and, consequently, did not provide the opportunity to include in the pricing of the trade the correct valuation of the counterparty risk incurred.

Besides this, the CCP facilitates efficient application of a multilateral netting mechanism, as it will always be the counterparty for each trade that the original counterparties have agreed to clear through the CCP. When netting takes place, by novation, a new claim replaces the accumulated claims between the CCP and its member, which are crossed out. This way, the use of the CCP reduces the capital requirements for the CCP-participant, which is usually a credit institution or an investment firm.

1.1.3 Settlement

After conclusion of the trade, settlement has to take place, i.e. the seller has to deliver the securities to the buyer and the buyer has to pay the agreed price to the seller. This usually takes place on a rolling basis two or three days after the trade day. Settlement takes place between the buyer and the seller, or between their respective settlement agents. When a CCP has intervened, settlement will take place between the buyer and the CCP, and between the seller and the CCP. Where the cash and the securities are held on accounts, the transfer of cash and securities, i.e. the settlement of the trade, takes place by debiting and crediting those accounts. A generally accepted counterparty risk mitigation technique is the Delivery versus Payment (DvP) procedure, implying that the final cash payment and final securities delivery between buyer and seller take place simultaneously.

1.1.4 Custody

Settlement presupposes that cash and securities are held somewhere. Unlike settlement, custody is a static process. The risk profile for holding cash differs from that for holding securities. When cash is deposited with a bank, the depositor has a claim on that bank, and not on the currency issuing central bank. In contrast, when securities are held with a depository, the depositor still has a proprietary claim vis-à-vis the issuer of the security. The depository merely acts as a safekeeper. Usually, this right of ownership is legally structured as a co-proprietary

(2) Not all markets have a CCP arrangement for clearing. However, in this paper, clearing will be defined as the interposition of a clearing house as a CCP.

right on a securities pool to make the securities fungible, i.e. interchangeable. The depository usually also offers corporate event services, such as capital redemption or coupon payments.

1.1.5 Registrar function

The registrar is the entity that has a direct relationship with the issuer of the securities. It will also act as a “notary” in respect of the issue. It will hold in custody in its books all the securities of a given issue, and thus occupy the top place of the pyramid in the holding chain; this enables it to centralise and control the overall securities holdings position. The jurisdiction in which the registrar-depository is located will define the specific legal characteristics of the security, such as its form (bearer security or dematerialised security) or other specific points (rules on corporate actions such as dividend payments and rights issues, etc.). Indirectly, these characteristics can influence the efficiency of the settlement of this security and the risks involved. When the participants of the registrar in turn hold securities in custody for their clients, a multi-tiered ownership structure arises.

1.2 Institutions involved in the handling of domestic trades in a traditional structure

At each functional stage, specific infrastructures are involved in order to increase the efficiency and the soundness of the trading and post-trading process. In traditional domestic regulated markets the local trading, clearing and settlement systems involved in a securities transaction are often vertically integrated, i.e., there is one and only one chain of infrastructures for a transaction to pass through. The direct participant in these systems is traditionally a domestic institution, and the bulk of transactions is traded, cleared or settled by these institutions. In some cases, the trading, clearing and settlement systems are owned by different legal entities. In other cases, the post-trade systems are owned by the exchange itself.⁽³⁾ Even in the case of private ownership, the public character of the systems is traditionally reflected in domestic regulation or approval by a public authority. This means of processing securities trades functioned very well in the pre-euro environment.

(3) Examples of the former are the UK systems comprising the London Stock Exchange and Liffe at the trading level, the London Clearing House at the clearing level and CREST at the settlement level; the Deutsche Börse trade and post-trade systems are an example of the latter.

Trading takes place through the local exchange where the domestic securities are listed, or on the bilateral OTC market for these domestic securities.

Not all markets use a CCP. The intervention of a CCP is generally the rule for exchange-traded derivatives such as futures and options. However, it is much less so for cash market transactions, while only a very small fraction of overall OTC trades – and especially fixed-income markets – are cleared via a CCP.

Securities transactions are traditionally settled through the local Central Securities Depository (CSD), with the local central bank acting as the cash settlement agent for the CSD participants. Indeed, the most efficient settlement method supposes that participants centralise their cash and securities holdings. The cash is then held with the central bank, where most CSD participants have an account. Likewise, the domestic securities are held, by those same participants, in the CSD. Both the central bank and the CSD intervene during the settlement operation. In this case, the securities settlement process consists of the relevant procedures carried out by both the central bank and the CSD. The CSD/central bank combination is called a Securities Settlement System (SSS). Of course, both the buyer and the seller of the securities can have their securities accounts and their cash accounts with one and the same institution. This is the case if a central bank operates an SSS itself. Alternatively, settlement can take place internally in the books of an SSS-participant.

The CSD usually also acts as the registrar of the domestic securities, although the registrar function might be exercised by a separate local entity.

Table 1 lists the different national exchanges together with the clearing and settlement systems they are using, including ICSDs. Settlement institutions may also process OTC trades.

1.3 Handling of clearing and settlement of cross-border trades

In a cross-border trade, a non-domestic end-user has to settle the securities trade and the processing becomes more complex than for settling between domestic participants. This problem is not new, and various procedures have been developed in the past to handle the settlement of cross-border trades. This section briefly reviews the existing handling procedures which are illustrated in chart 2.

TABLE 1 CLEARING AND SETTLEMENT SYSTEMS IN EUROPE

Country/ICSD	Trading	Clearing	Settlement
BE	Euronext Brussels	Clearnet	CIK, NBB SSS
DK	Copenhagen Stock Exchange	FUTOP (derivatives)	VP, FUTOP
DE	8 stock exchanges	Clearstream Banking Frankfurt (no CCP), Eurex Clearing	Clearstream Banking Frankfurt
HE	HELEX Exchanges S.A. HDAT	No CCP for securities, ADECH is CCP for derivatives	BOGS, CSD S.A.
ES	4 stock exchanges, CADE, MEFF	No CCP for securities, MEFacts as CCP for derivatives	SVLV, SCLV, CADE
FR	Euronext Paris	Clearnet	Euroclear France
IE	Irish Stock Exchange		CREST (Euroclear UK)
IT	Borsa Italiana S. p A.	LDT, CCG (but no CCP)	Monte Titoli
LU	Luxembourg Stock Exchange	Clearstream Banking Luxembourg (but no CCP)	Clearstream Banking Luxembourg
NL	Euronext Amsterdam	Clearnet	Euroclear Netherlands
AT	Vienna Stock Exchange, NEWEX	OeKB Clearstream Banking Frankfurt (but no CCP)	OeKB Clearstream Banking Frankfurt
PT	BVL, MTS Portugal	Interbolsa	Interbolsa, SITEME
FI	HEX	APK (but no CCP)	APK
SE	OM Stockholm Exchange		VPC
UK	9 regulated markets	LCH (CCP), OM	CREST (Euroclear UK)
Clearstream International		Clears and settles securities transactions in 33 markets through a network of links	
Euroclear Bank		Clears and settles securities transactions in 33 markets through a network of links	

Sources: Lannoo, K. and Levin, M. (2001); NBB.

1.3.1 Direct remote participation

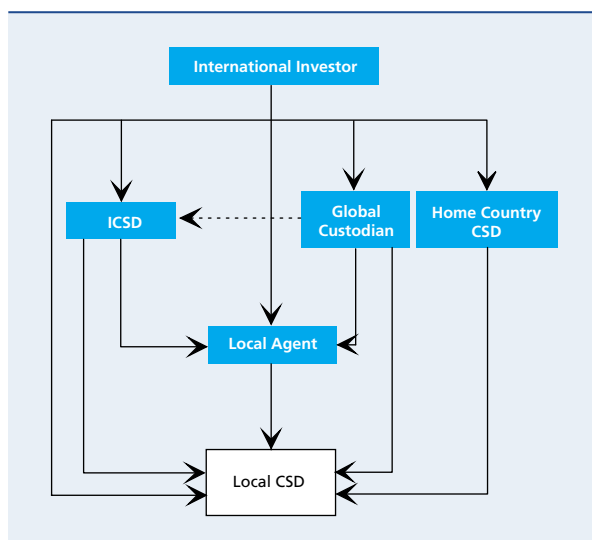
An SSS/CSD or a CCP can be accessed from abroad. Nevertheless, directly accessing a remote clearing or settlement system still proves to be a costly approach, as the remote participant has to cope with a specific procedure and interface for each system accessed. The back-office costs involved can be substantial. So, the number of remote participants in clearing and settlement systems has only gradually risen over recent years, in spite of the 1993 European Investment Services Directive which requires EU Member States to implement non-discrimina-

tory access to clearing and settlement systems by remote participants/trading members.

1.3.2 Indirect participation - Role of custodians

Since accessing an SSS directly from abroad does not offer the most efficient solution, many financial institutions use a custodian bank that acts as their transaction settlement agent. In some cases, the volumes settled by the custodian prove to be substantial. A custodian will usually settle the trades between its own participants internally in its own books. As a consequence, a tiered structure emerges,

CHART 2 HANDLING OF CROSS-BORDER SETTLEMENT OF A SECURITIES TRADE



Source : Giovannini Group (2001).

whereby the settlement activity may be concentrated partly on the lower level of the holding chain. When a custodian internalises a substantial amount of settlement activity, it is often called a quasi-system. Custodian activities are not restricted to settlement services, as custodians also offer related products such as portfolio investment valuation services, and their customer base differs and routinely comprises pension funds, for example. Global custodians offer settlement services for securities held in central securities depositories world-wide, while local custodians provide access to their domestic CSD.

1.3.3 Role of ICSDs

The Belgium- and Luxembourg-based ICSDs are a special kind of SSS. ICSDs have the legal status of a credit institution and hold both the cash and securities accounts of their participants in their books. Contrary to what its name might suggest, an ICSD does not act as a central securities depository, except perhaps – in a specific way – through the use of “common depository” banks for eurobonds. Indeed, the original purpose of ICSDs was the settlement of eurobonds denominated in various currencies. Later on, their cross-border settlement activity in other fixed-income products, such as government bonds, became more important. Nowadays, the bulk of EU cross-border fixed-income trades is settled through ICSDs. Recently they became involved in the equities settlement business. Unlike custodians, ICSDs are de facto limited purpose banks, exclusively offering settlement services and closely related settlement enhancing services.

1.3.4 Indirect participation - Linked SSSs/ICSDs

Instead of accessing a foreign SSS through a custodian, a user can access the SSS through another SSS. The latter SSS, called the “investor SSS”, will hold the securities for its client-user with the SSS that acts as the CSD, called the “registrar SSS”. Those SSSs are then said to be linked.

1.4 Forces driving change in the EU clearing and settlement environment

The internationalisation of securities markets has greatly increased the number of cross-border trades. This in turn has revealed the drawbacks and costs of the fragmentation in the EU post-trade securities handling industry for its users, both investors and issuers.

1.4.1 Growing number of cross-border trades

Both the introduction of the euro and the development of new technologies have contributed to the internationalisation of the securities market. Before the introduction of the euro, the bulk of domestic securities were bought by local investors, and the market liquidity was logically concentrated on domestic traders. The best option for foreign investors was to use local traders to conclude a trade. The euro generated growing cross-border investment in both fixed-income products and equities, and remote traders gained a wider client base so that they could play a bigger role. Technological innovation has also influenced the operation of both exchanges and OTC securities markets. When information technology made it feasible to organise markets without requiring the physical presence of their trading members, it became cost-efficient for trading members to trade from abroad.

1.4.2 Euro area payment infrastructure

It can be argued that each currency zone needs its “own” payments infrastructure. With the introduction of the euro, from a currency perspective, the traditional distinction between domestic and foreign Securities Clearing or Settlement Systems (SCSSs) blurred, and several CCPs or CSDs became active within one and the same currency zone. So, the euro area should strive to obtain a euro payments infrastructure⁽⁴⁾. On the other hand, some SCSSs – particularly ICSDs – operate in a multi-currency environment and service participants that are mainly located outside the euro area.

(4) See in this respect e.g. the September 2001 ECB press release on the Eurosystem's policy line with regard to consolidation in central counterparty clearing.

1.4.3 Stock exchange requirements

Trade execution and the subsequent settlement of a trade are complementary services, and users are shopping for a package (trade conclusion and settlement) rather than an isolated service. This is reflected in the demand for straight-through-processing (STP), enabling the seamless conclusion and processing of a trade. Thus, exchanges do have an interest in the post-trade environment. Within the logic of the chain linking trading, clearing and settlement, a trading platform will seek an integrated clearing and settlement solution. So, with mergers taking place at trading level, this creates pressure to speed up integration at the clearing and settlement level.

1.4.4 Pressures to reduce costs of post-trade handling services

As a corollary of the ever-growing internationalisation of trading activity, investors are now demanding efficient and sound post-trade treatment of cross-border securities transactions. When accessing several systems, a participant wants the system interfaces and procedures to be as harmonised as possible. Not surprisingly, system participants ask for “interoperability” of the systems they use. In the current EU environment, some twenty securities settlement or clearing systems are in operation, and the objective will not be easy to achieve.

The amount of fees paid to settlement providers increases the longer the chain of intermediaries, but a chain is unavoidable for most investors wishing to access local payment systems and the local CSDs. A longer chain often requires manual handling of part of the process, which increases the number of errors. Apart from this, costs also include the so-called pipeline-costs, i.e. the cost of the capital or securities temporarily tied up in the settlement process.

Measuring the costs incurred by a settlement service user is not a straightforward issue. Lannoo, K. and Levin, M. (2001) have conducted such an exercise and their findings were cited in the Giovannini report (2001). The authors themselves warned that their study suffered from considerable methodological problems and a lack of clear data, preventing precise comparison. However, one clear result is that the highest costs are not the direct costs, such as fees to settlement providers, but the indirect costs, such as back-office costs borne by system participants. Hence, higher overall EU costs can be attributed to the fragmented nature of the EU clearing and settlement infrastructure. A second finding is that in-system settlement is always cheaper than cross-

system settlement. Finally, Lannoo and Levin compared EU to US settlement costs, using the operating income of settlement systems as a proxy. As can be inferred from table 2, the use of netting is much more extensive in the US Depository Trust and Clearing Corporation (DTCC) systems, leading to much lower settlement costs per transaction, on a pre-netted basis. The fact that netting is less used or less effective in the EU explains why the EU/US cost ratio is higher on a pre-netted basis. Also, they found that ICSDs have higher operating income per transaction, reflecting the complexity of settling international transactions whose costs are internalised by the ICSDs. It thus appeared that the in-system settlement costs charged by EU CSDs – excluding ICSDs –, when corrected for the less frequent use of netting, were found to be comparable to US settlement costs (ratio 1.08 : 1).

As the rationalisation of the SCS industry should drive down the costs of post-trade handling, it will be beneficial for both investors in securities and securities issuers. However, as illustrated in box 1, the interests involved are quite diverse, which explains why progress is difficult to achieve in this field.

TABLE 2 FOUR OPTIONS FOR CALCULATING OPERATING INCOME PER TRANSACTION ⁽¹⁾

	Pre-netting		Post-netting	
with ICSDs	EU:	€ 3.10	EU:	€ 5.14
	DTCC:	€ 0.40	DTCC:	€ 2.77
	Ratio:	7.75 : 1	Ratio:	1.86 : 1
without ICSDs	EU:	€ 1.74	EU:	€ 2.98
	DTCC:	€ 0.40	DTCC:	€ 2.77
	Ratio:	4.35 : 1	Ratio:	1.08 : 1

Source : Lannoo, K. and Levin, M. (2001).

(1) The comparison of pre-netting to post-netting ratios reveals the consequences of the non-generalised implementation of netting in the EU. Inclusion of the ICSD figures adds complex international transactions, whose costs are internalised by the ICSDs.

Box 1

Interests of SCSS industry participants

System operator

The operator is the administrator of the system responsible for its overall management. In its traditional domestic environment, a CSD/SSS has a quasi-monopoly. Generally, public regulation defines the limits of its activity. However, a CSD/SSS can also function within the framework of a co-operative structure that can therefore be influenced by its user-participants. In some cases, central banks – traditionally the operators of high-value cash payment systems – do also act as a CSD, usually for domestic public sector bonds. In that case, the central bank operates a CSD/SSS, holding both the securities accounts and the cash accounts of the system.

System service provider

A system service provider delivers services to the system operator or to its participants. As an obvious example, the system operator can use an IT-provider for the programming, the operation and/or the maintenance of the IT needed for the system to function. Likewise, software vendors provide interfaces enabling the system's participants to access the system. A specific service is the provision of cash accounts to SSS participants, as those are necessary for the SSS to function. Central banks can provide the cash accounts used to settle securities transactions in the SSS. Traditionally, the local central bank acts as the sole cash settlement agent for each direct SSS participant. Alternatively, the cash settlement accounts can be provided by a selection of settlement banks or by the system operator itself, provided it is a bank.

System participant

A system participant has the choice of becoming a direct SSS participant or accessing the system indirectly. Direct participants are mainly credit institutions and include investment firms. The specific character of their activities may create diverse needs: they may be active traders settling huge volumes, or they may hold securities for a longer period; they may operate mainly locally or be internationally oriented; they may have sufficient cash/collateral available or they may not, and so on. CCPs and other SSSs are specific categories of SSS participants. System users have an obvious interest in the soundness, efficiency and interoperability of the systems. They are also sensitive to the network effects of the systems used, which implies that size matters and they seek a "critical mass". On the other hand, system users may at the same time be in competition with the system by "internalising" clearing or settlement activity, so that their relationship with the system is ambiguous.

A specific system user is the central bank that uses the SSS to accept securities collateral when providing credit, e.g. for monetary policy operations. Central bank operations are only a minor part of the overall securities market transactions. Nonetheless, the central banks belonging to the European System of Central Banks (ESCB) are especially concerned about the SSSs they use. In 1998, in the run-up to EMU, they promulgated the "Standards for the use by EU central banks of SSSs for ESCB credit operations".

Financial centre

Finally, it is clear that the SCSS industry is considered by most countries as a sensitive issue, related to questions of competition between financial centres. This seems to be particularly the case for "national" stocks traded on a national exchange, whereas there is much greater acceptance of the fact that OTC fixed-income trades are settled abroad. Of course, exchanges are bound to worry about trades being settled in a sound and efficient way. But part of the underlying reason might be the fear that the trading activity could relocate once the post-trade facilities are reorganised.

2. Efficiency

An SCSS which functions well has to meet the two fundamental criteria of efficiency and stability. Although those two criteria will be reviewed successively in this and the

next chapter, it is important to remember that they are closely linked. On the one hand, resilience to shocks is an obvious prerequisite for an efficient system. On the other hand, in the design of systems, trade-offs have sometimes to be made between cost-efficiency and stability.

In this chapter, we have a closer look at efficiency considerations. In order to arrange an efficient SCSS industry, it will first be necessary to create an environment ensuring proper access, compatibility and interoperability between the existing systems, so as to open up clearing and settlement systems to competitive pressures. This will require the removal of barriers. This new environment will then reshape the structure of EU clearing and settlement, possibly leading to a more integrated clearing and settlement industry. Finally, once this condition is satisfied, it is important to ensure that users get enough benefits from the new environment, in particular if dominant integrated systems emerge.

2.1 Removal of barriers to a single market for securities clearing and settlement services

International market players want to extend the reach of the SSS network. Any settlement services provider wishing to offer settlement services in a security for which it is not the registrar CSD will need to link directly or indirectly to the relevant registrar CSD. When these registrar CSDs are owned by different entities, questions of interoperability and co-ordination of service quality become very important. In this respect, the Group of Thirty, a body composed mainly of settlement system users and public sector officials acting in a personal, advisory capacity, has published a report⁽⁵⁾ calling for the interoperability of securities clearing and settlement systems. Among other things, this implies harmonisation of SCSS messaging standards and communication protocols, to permit the seamless transfer of information between the different systems.

In addition, EU CSDs themselves have indicated that they want to make their services compatible with those of other CSDs. In this respect, the Central Securities Settlement Institution (CSSI), as described in Deutsche Bank Research (2003), should be mentioned. This project envisages the standardisation of messages between the CSDs involved, i.e. the Euroclear group CSDs, Clearstream Bank Frankfurt, Monte Titoli and the Swiss SIS. The project should facilitate the efficient cross-border settlement of equities. CSSI clients would be confined to the participating CSDs. Production-side economies of scale seem to be an important motive for this scheme.

At the same time, the European Commission itself has acknowledged that the existing clearing and settlement structure is itself a barrier to an integrated EU capital market. In the light of the European Commission (1999) action plan aiming at the creation of a single market for financial services by 2005, the Commission is considering the reorganisation of the securities clearing and settlement

industry, eventually by means of a legislative initiative. In its market consultation paper on clearing and settlement in the EU (2002), the Commission's starting point is the overly fragmented structure of the EU securities clearing and settlement industry and the consequent costs. Setting up a competitive environment would increase the degree of consolidation and reduce the costs. The Commission identifies two priorities: the removal of barriers to competition between systems, and the creation of a level playing field between institutions.

The November 2001 report of the Giovannini group – acting as an advisory body of market participants to the European Commission – enumerated fifteen barriers to efficient cross-system clearing and settlement in the following categories: national differences in technical requirements, in market practice and in tax procedures and, finally, issues relating to legal certainty. A second report of the group, issued in April 2003, defines a strategy for removing these barriers, taking into account their importance and their interdependencies, with due regard for both cost efficiency and risk minimisation. For the removal of each barrier, a time schedule and the responsible entity have been specified. As can be seen from chart 3, the Giovannini II report proposes an ambitious time schedule, indicating that all barriers should be removed within three years. The ultimate goal is to guarantee both the issuer and the investor the choice of location of clearing and settlement services. This should ultimately result in market-led integration of the clearing and settlement infrastructure. The path followed and the final outcome will depend on the market, but it is essential that issuers and investors reap the benefits of the changes. This integrated post-trade infrastructure should also take into account the public policy issues of cost efficiency, competition and systemic stability, and the regulatory and supervisory structure for enforcement should be able to function on a pan-European basis.

Another aspect addressed in the European Commission's market consultation paper mentioned above is the need to create a level playing field between institutions and to avoid regulatory arbitrage. Institutions active in the SCSS industry are increasingly entering the domains traditionally preserved for other categories of institutions. So, CSDs which do not have bank status and which, as a consequence, are not authorised to provide cash accounts or cash credit, feel at a disadvantage vis-à-vis custodians, which can offer these "core" settlement services. From another point of view, custodian banks which do offer these services, claim

(5) Group of Thirty (2003), "Global clearing and settlement – A plan of action".

that they alone should be able to do so, while CSD and ISCD activity should be restricted to a very limited sub-field of core settlement services, excluding the extension of cash credit and the securities lending facility, for example. ICSDs in turn argue that custodian banks can propose settlement services comparable to the ones they offer without having to cope with similar standards, such as the need to be a limited purpose bank or to fully mitigate all extension of credit and securities lending.

Besides this specific consultation regarding EU clearing and settlement, the European Commission is addressing this issue in two other ways. The first is in the context of the Investment Services Directive upgrading which aims to forbid Member States to unnecessarily restrict investment firms' rights of access to and choice of clearing and settlement systems.

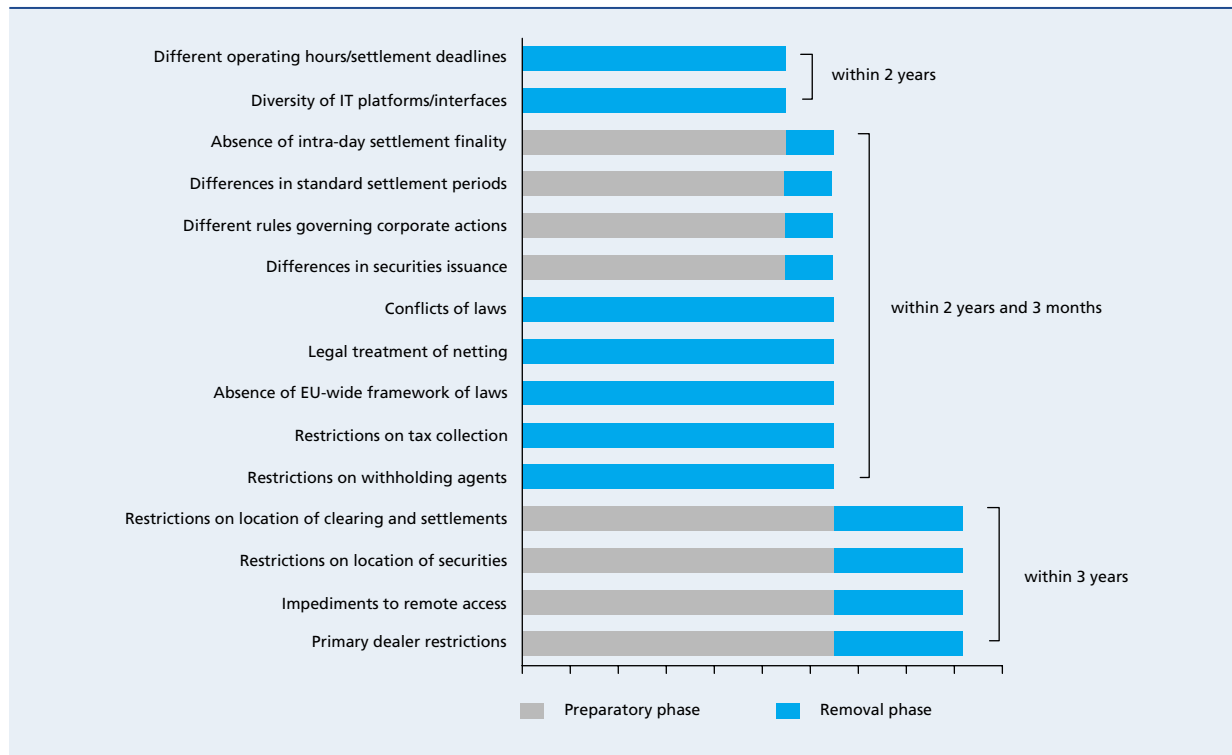
The second concerns an initiative of the Directorate-General for Competition which, as an investigative authority, is currently examining whether the system practices regarding access conditions and pricing policies comply with Articles 81 and following of the EU Treaty.

2.2 Building a more integrated clearing and settlement services industry

The removal of barriers will influence the consolidation process in the SCSS and, in particular, will stimulate the emergence of large service providers. This development is already taking place. The underlying factors are reviewed in this section. In such a context, it is important to prevent distortion of competition by ensuring adequate organisation and governance structures. These aspects are examined in the next section.

Further concentration of the EU clearing and settlement industry is very likely. One may refer to the US experience, where the equities markets moved from a system of seven CSDs owned by exchanges to one CSD and one CCP, so that clearing and settlement for the US equities markets now takes place through the single facilities of the DTCC. Separate facilities exist for other categories of products. US government bond transactions are mainly settled through two big US-based custodian banks. Separate single facilities also exist for mortgage bonds and exchange traded options.

CHART 3 Timeline for removing the barriers to an efficient clearing and settlement environment



Source : Giovannini Group (2003).

In the EU, too, the existence of economies of scope and economies of scale will favour the emergence of very large service providers.

On the one hand, the settlement service is composed of a package of complementary services. The holding of cash accounts, the holding of securities accounts and a settlement mechanism constitute the basic complementary services (complements) of an SSS. Other relevant complements include the provision of cash credit and securities lending mechanisms to facilitate settlement. The potential benefit that might result from integrated provision of those various services is one factor that could shape the consolidation process in the industry.

On the other hand, SSSs are networks⁽⁶⁾ that display positive consumption externalities and production economies of scale. As a consequence, a monopoly in the services provided tends to develop more quickly, in the absence of barriers. This might lead to the emergence of a fully integrated SSS industry instead of a set of separate but interoperable systems.

Any single SSS – be it an ICSD or a CSD/NCB-combination – takes advantage of the existence of consumption network externalities. Just as nobody will buy a fax machine if he is the only one to do so, nobody will use a settlement system if he is the only one to use it. Settlement that takes place on accounts belonging to the same system is an entirely different operation from settlement involving accounts in two or more systems. For a given security, the utility derived from using an SSS will increase with the number of participants using the system. And for a given number of participants, the same applies for an increase in the number of securities processed and the number of trades settled.⁽⁷⁾

Economies of scale in production play a role in the operation of a SSS. Building a sound and efficient SSS may entail considerable fixed costs. These may consist of costs for construction and maintenance of the core system (IT, etc.) and costs (legal, etc.) for accessing foreign CSDs and thus increasing the number of securities that users are potentially able to hold and process in the system. But once the system and the links are in place, the cost of adding an additional user and/or security, supposing it belongs to a category already held/processed by the system, may be negligible.

An SSS can be considered as a network, but so can a group of SSSs. A logical question is whether SSSs have an interest in extending the network they use by making their services compatible with each other. Alternatively, locking-in users could be used as a strategy. Besides the fact that a user does not always have a choice with regard to the SSS it may use to settle a given security, the cost of switching one SSS for another can be significant. The system users are thus said to be locked-in. Switching costs are influenced by several factors. They may include contractual and loyalty costs, training and learning, data conversion and IT-system adaptation costs and search costs. Switching costs can affect price competition in two ways. Locked-in users may be subject to price increases, and new users may be offered discounts.

A distinction is often also made between vertical and horizontal integration models. Vertically integrated structures are said to derive efficiency (operational cost savings) from a STP mechanism, the smooth successive operation of trade and post-trade processing. One user-friendly element comprises the “single interface”, where the instruction to generate the trade is automatically used as a feed for clearing and settlement purposes. For example, the exchange can, on behalf of the trading member, send the necessary instructions automatically to the clearing house and the clearing members involved, and so on. However, in the current technical environment, increasing standardisation and decreasing communication costs no longer require a single integrated silo to apply STP. Sending instructions to several systems becomes manageable, and the single and exclusive vertical chain in processing the trade is no longer an absolute value-added in this respect (Lannoo, K. and Levin, M., 2001). Possible settlement models in this context are presented in box 2.

On the other hand, horizontal integration makes it possible to clear and/or settle all trades in the same system. The “CCP as an hourglass”-model contained in box 2 is an example at clearing-level. At settlement-level, things will probably move faster for the investor than for the issuer, as it is likely that the “notary”/registrar CSD function will remain domestic in the short to medium term, due to legal complexities, and the issuer will not immediately be able to choose the location of the desired service, nor will these facilities be merged in the short term. Meanwhile, this will not necessarily preclude the integration of the settlement services activity of different CSDs/SSSs.

While the driving forces behind the consolidation process are clear, it is difficult at this stage to determine a priori in which direction it will evolve. Box 2 contains a short presentation of some of the models that could emerge from this process.

(6) With regard to networks and network characteristics in general, see e.g. Shy, O. (2001), Economides, N. (1996), and Katz, M.L. and Shapiro, C. (1994).

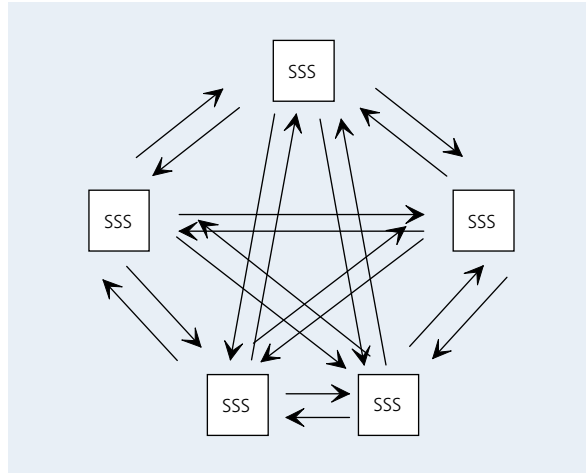
(7) See, in this respect, Cruickshank, D. (2001), who defends on this basis a completely unified utility at EU level for clearing and settlement respectively.

Box 2

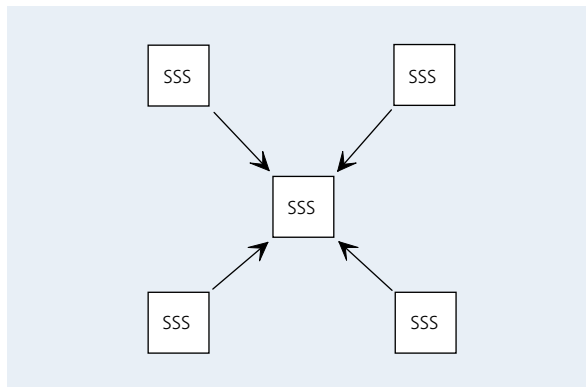
Models for an integrated clearing and settlement infrastructure

Directly linked SSSs – Spaghetti model

A direct link connects two SSSs. Here, the SSS labelled “investor SSS” is a direct participant of the “registrar SSS/CSD”. This model was proposed by the European Central Securities Depository Association (2000) white paper that advocated direct bilateral links between CSDs. If each SSS wants to hold all securities, this model requires a maximum number of links. Dubbed as the “spaghetti model”, it was never fully implemented.

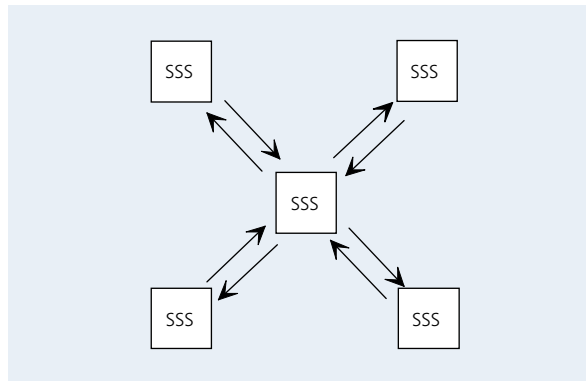
*Directly linked SSSs – Hub and spokes model*

A more concentrated model, requiring a minimum number of links, is the hub and spokes model. This model was presented by Euroclear (1999). Cross-border business would be concentrated in the hub and domestic business in the spokes, that also continue to act as a registrar CSD. A corollary of this model is that internal settlement of all the securities held in each registrar CSD will only be possible between direct hub SSS participants. Registrar CSD participants will only be able to settle the domestic securities held in their CSD. This model has also been abandoned.



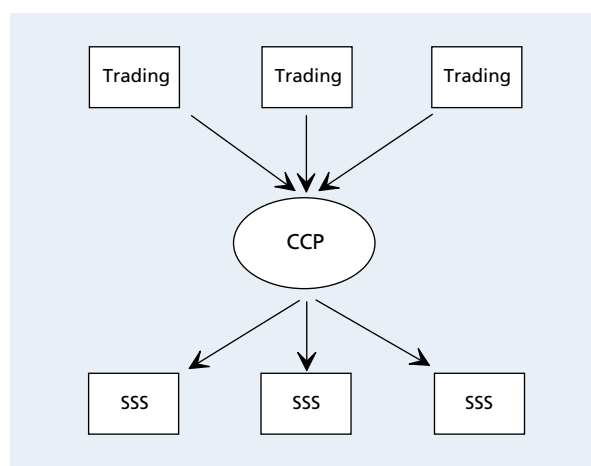
Indirectly linked SSSs

This proposal has been made by both CSDs and ICSDs. Here, an “investor SSS” is linked indirectly to a “registrar SSS” via a so-called “middle” SSS. In this model, the investor SSS only needs one link to the hub to indirectly hold the securities of each registrar CSD. The decision to link in this way to a registrar CSD is an investor SSS decision.



CCP as an hourglass between markets and SSSs

A CCP, interposing itself between the buyer and the seller, can act as a pivot connecting several domestic markets and several domestic SSSs. In principle, one or several such CCPs could co-exist. A “one CCP for the EU-zone”-project was presented in the European Securities Forum (2000) paper. The advantage at clearing level will be that a sole CCP nets its members’ transactions irrespective of the market where the transaction is concluded. So, if a clearing member buys a security on the exchange, and sells the same amount of that security on another exchange or OTC, its net securities position vis-à-vis the CCP will be zero. This netting effect of the CCP will reduce the number of trades that has to be settled and thus cut the unit cost of overall settling.



2.3 How to limit the power of a dominant utility

When dominant structures emerge, their power can be counterbalanced in two ways. First, the industry should be properly organised, guaranteeing strict conditions of access to the essential facility functions corresponding to the natural monopoly functions of the industry while opening all other aspects to competition. Second, adequate governance structures should ensure that the interests of users are genuinely taken into account.

2.3.1 Essential facilities and compulsory access

An essential facility is that part of a service considered sub-optimal to duplicate, given the existing technologies, and exclusion from that facility would place competitors in the “downstream” market at a significant disadvantage.

The experience of the telephony sector can provide an example. Until the 1980s, telephony was considered a “natural” monopoly. As a consequence, governments licensed a single company to deliver the service and regulated its price on a production cost basis. This approach was called into question recently, as it was recognised that the promotion of more competition would allow consumers to receive a better service or to pay less. At present, only the existing local wiring network is considered to be a natural monopoly, i.e. an essential facility. Compulsory access and access-pricing rules were imposed with regard to the essential facility, thus enabling rival long-distance connection companies to compete in their “downstream” market. At the same time, companies that are granted access to the local connection services provided by the local wiring network operators are able to offer substitute services or to develop complementary ones, such as ADSL services, so that innovation is not hampered. (Shy, O., 2001).

It would take too long to detail here the precise conditions for applying the essential facilities concept, but this concept is used in both US and EU competition law, although in different ways. EU courts usually analyse essential facility cases in terms of a refusal-to-deal, as envisaged under Art. 86 of the EU Treaty that prohibits the abuse of a dominant position (Harz, M., 1997).

Milne, A (2002) defends a similar approach for the securities settlement industry where some core functions, i.e. the core registrar CSD monopolies of both securities book transfer and communication of corporate actions, are treated as essential facilities. Because a security ultimately exists only in one depository, and because the issuer communicates solely with that depository, it is impossible to duplicate this service. Registrar CSDs should account

separately for these functions and allow access on a non-discriminatory basis to a wide range of eligible members. This unbundling of functions would avoid cross-subsidisation between essential facilities and other services. If this condition is fulfilled, the registrar CSD itself and all of its members should be able to compete for settlement services in the “downstream” market. Thus, the infrastructure itself should be entitled to compete with its users, once the essential facility functions which it operates can be accessed in a non-discriminatory and fair way.

In the specific context of SSSs, the fact that the infrastructure itself competes with its users might also be a way to avoid excessive tiering. An infrastructure offering an efficient service complying with strict soundness criteria might see its attractiveness reduced if it cannot compete on a reasonable basis with its participants. Reference could be made here to the settlement of US Treasuries where, due to the restriction of services at the level of the Fedwire SSS, the bulk of settlement activity is concentrated on a second tier with two big participants of this settlement system. This seems to have raised some concern as the Federal Reserve System and the Securities and Exchange Commission launched an industry consultation on the impact this has on the resilience of the overall Treasuries settlement infrastructure in their interagency white paper (May 2002).

2.3.2 Governance issues

The organisation of the governance of the system is an important tool and enables users to have their say in the design and management of the system.

Traditionally, many systems have been structured as joint ventures where system members have their say. Even today, when demutualisation takes place, this remains a valuable principle. Members can be expected to give more attention to the risk management of a system than non-member shareholders. Likewise, in a situation where the system has a monopoly position, the influence of users in the design and the management of the system should provide the necessary counterbalancing powers to the possibility of an excessive pricing policy. Both these elements favour the implementation of user governance, which is also the approach of the CPSS-IOSCO Recommendations for SSSs.

At the same time, it is clear that user governance also has its limits. As cross-border trade activity grows, the number of potential remote participants with specific interests in the design of the system will increase. But if remote participants access a system indirectly via a local intermediary they are, by definition, not represented in the system's governance

arrangements. This can be a problem to the extent that it is in the members' interest to restrict access and so to be able to act as intermediary for the services offered by the system. In this context, the demutualisation and listing of some EU exchanges, where it is no longer necessary for all exchange owners to be members, may have a beneficial impact on the restructuring of the industry. But non-member shareholders will try to maximise the profit for the system rather than the members. Thus, the genuine interests of members should be taken into account at the same time. It should also be recalled here that users are not a uniform category, and that, for example, users generating larger volumes will usually matter more.

When the post-trade systems are part of an integrated silo of trading-clearing-settlement, specific issues arise. Firstly, the exchange can more easily abuse its power by only accepting its own trades to be settled in its own settlement system. One argument sometimes presented in favour of such exclusivity is that other exchanges or alternative trading systems listing the same securities should not receive a "free lunch" by being able to access the post-trade system. However, should the post-trade system be independent of the exchange, its prime interest would be to attract as much settlement volume as possible, irrespective of the platform where the trade is concluded. Secondly, in the case of common ownership of a vertical integrated structure, cross-subsidisation of the trading, clearing and settle-

ment services offered might take place. Trade and post-trade handling costs should be split and assigned to the parties involved in a fair way.

3. Soundness considerations

3.1 CPSS-IOSCO Recommendations

Both securities commissions and central banks are paying great attention to the soundness of the post-trade processing of securities transactions in order to reduce the systemic risk, i.e. the risk that the inability of one institution to meet its obligations when due will result in other institutions becoming unable to meet their obligations. The CPSS-IOSCO Task Force has established a list of recommendations for securities settlement systems recorded in box 3. Those recommendations are now in the process of being adapted to the EU environment by the ESCB-CESR Task Force.

As can be seen from the CPSS-IOSCO recommendations, authorities are concerned not only with the soundness of settlement services but also with their efficiency. Furthermore, these recommendations target the settlement of both domestic trades and cross-border trades, the latter frequently involving more than one system.

Box 3

The CPSS - IOSCO Recommendations for SSS

Legal risk

1. Legal framework

Securities settlement systems should have a well founded, clear and transparent legal basis in the relevant jurisdictions.

Pre-settlement risk

2. Trade confirmation

Confirmation of trades between direct market participants should occur as soon as possible after trade execution, but no later than trade date (T + 0). Where confirmation of trades by indirect market participants (such as institutional investors) is required, it should occur as soon as possible after trade execution, preferably on T + 0, but no later than T + 1.

3. Settlement cycles

Rolling settlement should be adopted in all securities markets. Final settlement should occur no later than T + 3. The benefits and costs of a settlement cycle shorter than T + 3 should be evaluated.

4. Central counterparties (CCPs)

The benefits and costs of a CCP should be evaluated. Where such a mechanism is introduced, the CCP should rigorously control the risks it assumes.

5. Securities lending

Securities lending and borrowing (or repurchase agreements and other economically equivalent transactions) should be encouraged as a method for expediting the settlement of securities transactions. Barriers that inhibit the practice of lending securities for this purpose should be removed.

Settlement risk

6. Central securities depositories (CSDs)

Securities should be immobilised or dematerialised and transferred by book entry in CSDs to the greatest extent possible.

7. Delivery versus payment (DVP)

CSDs should eliminate principal risk by linking securities transfers to funds transfers in a way that achieves delivery versus payment.

8. Timing of settlement finality

Final settlement should occur no later than the end of the settlement day. Intraday or real-time finality should be provided where necessary to reduce risks.

9. CSD risk controls to address participants' failures to settle

CSDs that extend intraday credit to participants, including CSDs that operate net settlement systems, should institute risk controls that, at a minimum, ensure timely settlement in the event that the participant with the largest payment obligation is unable to settle. The most reliable set of controls is a combination of collateral requirements and limits.

10. Cash settlement assets

Assets used to settle the ultimate payment obligations arising from securities transactions should carry little or no credit or liquidity risk. If central bank money is not used, steps must be taken to protect CSD members from potential losses and liquidity pressures arising from the failure of the cash settlement agent whose assets are used for that purpose.

Operational risk

11. Operational reliability

Sources of operational risk arising in the clearing and settlement process should be identified and minimised through the development of appropriate systems, controls and procedures. Systems should be reliable and secure, and have adequate, scalable capacity. Contingency plans and backup facilities should be established to allow for timely recovery of operations and completion of the settlement process.

Custody risk

12. Protection of customers' securities

Entities holding securities in custody should employ accounting practices and safekeeping procedures that fully protect customers' securities. It is essential that customers' securities be protected against the claims of a custodian's creditors.

Other issues

13. Governance

Governance arrangements for CSDs and CCPs should be designed to fulfil public interest requirements and to promote the objectives of owners and users.

14. Access

CSDs and CCPs should have objective and publicly disclosed criteria for participation that permit fair and open access.

15. Efficiency

While maintaining safe and secure operations, securities settlement systems should be cost-effective in meeting the requirements of users.

16. Communication procedures and standards

Securities settlement systems should use or accommodate the relevant international communication procedures and standards in order to facilitate efficient settlement of cross-border transactions.

17. Transparency

CSDs and CCPs should provide market participants with sufficient information for them to identify and evaluate accurately the risks and costs associated with using the CSD or CCP services.

18. Regulation and oversight

Securities settlement systems should be subject to transparent and effective regulation and oversight. Central banks and securities regulators should cooperate with each other and with other relevant authorities.

19. Risks in cross-border links

CSDs that establish links to settle cross-border trades should design and operate such links to reduce effectively the risks associated with cross-border settlements.

Both the co-operation between systems and their consolidation raise risk aspects as, in term of soundness, size will generally matter. When an individual system grows or when systems integrate, the probability of disruption may well decrease but its potential impact on systemic stability could become much more important. Supervisors and overseers will have to be particularly attentive when considering low probability risks of catastrophic events. At the same time, it could be argued that an integrated infrastructure will imply fewer service providers, and that it will be easier for the supervisor to monitor such a system.

As efficiency considerations have been discussed in the previous chapter, this chapter will concentrate on soundness issues related more specifically to cross-border trades, taking some selected CPSS-IOSCO Task Force Recommendations as a guideline.

3.2 Legal soundness (Recommendation 1)

Recommendation 1 requires SSSs to have a well founded, transparent legal basis in all relevant jurisdictions, setting a requirement that underpins all further recommendations. For cross-border settlement, conflict of law rules should clearly indicate the law applicable. This referencing law is specifically relevant in the current EU legal environment composed of sometimes very heterogeneous national jurisdictions. At the same time, further harmonisation of existing laws is highly desirable. In some specific fields relating to clearing and settlement, general principles have already been harmonised or are in the process of harmonisation, as is testified by the EU Settlement Finality Directive and the Collateral Directive. The Giovannini II report advocates a harmonised EU securities law, also regulating the issuance and characteristics of securities. From a soundness point of view, it is important to avoid a race to the bottom. A harmonised legal and regulatory environment will prevent settlement providers competing by applying less stringent risk management standards.

3.3 Settlement cycles (Recommendation 3)

Recommendation 3 promotes a rolling settlement cycle of three working days after the trade day. Here, the market rule depends on the technical capabilities of the post-trade environment. Shorter settlement cycles do reduce the risk that market members incur between trade and settlement date, but can prove to be counterproductive if they result in a strong increase in the number of settlement failures. The more complex and fragmented the post-trade settlement infrastructure, the greater the risk of such failure.

Furthermore, an integrated EU capital market requires harmonisation of the settlement cycles, which currently differ between securities markets. Clearly, there will be a second trade-off between the advantages of harmonisation and those of shorter settlement cycles, as harmonisation could require the lengthening of the settlement cycles for some securities trades.

3.4 Use of CCPs (Recommendation 4)

Recommendation 4 states that the benefits and costs of the use of a central counterparty (CCP) should be assessed.

The use of a CCP has the potential to reduce systemic risk, as the intervention of a CCP usually has a strong impact on the subsequent settlement activity. To the extent that trades are netted, immediate (T + 0) settlement occurs de facto for these parts of the trades that are crossed-out, as compared to T + 3 settlement for most long-term securities cash market trades.

The netting process of a CCP is optimal when its clearing members are allowed to clear and net all their trades in a given security through the CCP, and not exclusively the trades executed on a particular exchange. Hence the obvious attractiveness, equally from a risk management point of view, of the “one CCP for the EU-zone”-project. Smaller overall net positions vis-à-vis one CCP will also reduce the need for collateral from the clearing member.

On the other hand, it is clear that any further concentration of CCPs, or even a single CCP for the EU, would concentrate clearing risks and increase the impact of a default by the clearing house. A model of a CCP acting as an hourglass between markets and SSSs is presented in box 2. Given the CCP's pivot position, any disruption at that level could impact several markets and/or SSSs. Currently, the CPSS-IOSCO Task Force is in the process of elaborating a set of standards specifically aimed at CCPs.

3.5 Risk controls (Recommendation 9) and Cash settlement assets (Recommendation 10)

When an SSS extends intra-day credit to its participants or operates a net settlement system, Recommendation 9 envisages that the system must be able to continue operating in the event of default by its largest participant. This constraint should increase in a consolidated system which will normally face higher positions and transaction volumes from its participants.

To offer settlement at cross-border level in an integrated entity, risk minimisation and operational cost savings should be reconciled. On the cash side, if central bank money or credit is not used, Recommendation 10 accepts as an alternative that the SSS may be a so-called limited purpose bank (LPB). An LPB is, by definition, exposed to a smaller range of risks as it limits the scope of its activities, compared with a full purpose bank. An LPB is also required to fully mitigate its credit extension. Such a structure offers a welcome alternative to a system where the central bank would be the sole possible settlement agent. Indeed, not all system participants have access to central bank accounts and credit. Besides, decentralisation in the execution of the Eurosystem monetary policy implies that the various national central banks (NCBs) may grant credit exclusively to their own domestic participants. The LPB structure offers a valuable solution, enabling the LPB both to offer cash accounts and to provide cash credit to all participants. Of course this format, that is also discussed in the Federal Reserve System and Securities and Exchange Commission Interagency white paper (May 2002), should be clearly defined and open to all interested parties.

3.6 Operational reliability (Recommendation 11)

Recommendation 11 looks at the operational reliability of a settlement system. When systems become interoperable, the sound design of their common interfaces and procedures becomes all the more critical because of their widespread use. Interoperability could facilitate the organisation of contingency plans, as the various systems could be used as mutual back-up facilities in case of a calamity. However, this option should be carefully assessed, and it might prove less workable or desirable than a standard contingency arrangement.

Contingency planning will become more crucial in the case of consolidation, as disruption of a consolidated system settling higher volumes and servicing more markets than any of the individual systems existing before will potentially have a bigger systemic impact, with contagion spreading more rapidly between the markets

it serves. The requirements set for the contingency plans of such a system should reflect this. In this respect, the April 2003 Interagency white paper on sound practices to strengthen the resilience of the U.S. financial system, a post 11 September exercise, calls for the identification of clearing and settlement activities in support of critical financial markets, and sets precise time-related and geographical criteria for contingency arrangements for both industry facilities and other firms that play a significant role in clearing and settlement.

3.7 Governance (Recommendation 13)

Recommendation 13 explicitly addresses user governance. Since a monopoly-inclined entity – such as an SSS – might let its own interests prevail, there must be an appropriate system for balancing the stakeholders' interests. The recommendation states that the users of the SSS should be sufficiently involved to have a say in its design and management. Users need to have a clear insight into the risks and costs of the system they use.

3.8 Linked SSSs (Recommendation 19)

Recommendation 19 specifically looks at the design and functioning of links between CSDs. When systems become interrelated, systems and system links should be designed and managed in a way that, as far as possible, avoids contagion between markets and/or systems. All legal consequences have to be scrutinised, and possible conflicts of law between the jurisdictions involved have to be avoided. Of utmost importance is the timing of settlement finality in linked systems, so as to ensure that securities received by a system are only further processed after the transfer has become final in the first system. Operationally speaking, the settlement of trades via links will be more demanding as compared to in-system settlement. For example, DvP-settlement between participants in different systems will be more complex. The realignment of securities positions held in different systems will have to take place up to the level of the system in which the security is transferred. Also, the reconciliation of securities positions will become more demanding, as it will have to take place at each holding level. Finally, the models of linked SSSs presented in box 2 illustrate that de facto hubs may emerge among those linked SSSs. If so, any disruption at the level of the hub SSS could potentially impact on the functioning of any other SSS linked to this hub.

3.9 Field of application of the recommendations

A final relevant issue is the field of application of existing or future recommendations for clearing and settlement. This question concerns in particular quasi-systems. Their emergence might have adverse implications if the risks are not appropriately managed by the quasi-system.

A settlement system – irrespective of the nature of the institution(s) performing this function – should ideally be capable of both offering cash accounts and securities accounts for system participants, and providing cash credit and securities lending facilities at short notice. If one of these four functions ceased to be part of the settlement service, the services offered to a system user could clearly be considered as suboptimal from the client's point of view. In an environment where alternatives are available, the system will probably lose its customers to the sub-level where these same services are offered in a suitable way, i.e. tiering will occur. This can be problematic from a risk point of view, as the bulk of settlement activity might switch to institutions that have a less stringent risk profile. The overall systemic risk will increase.

Traditionally, the standards for SSSs are intended for CSD/NCB-combinations and ICSDs. It is these systems that settle the bulk of securities trades and form the main focus of overseers. Likewise, in the EU, only SSSs have been designated and protected in the framework of the EU Settlement Finality Directive. In the current EU environment, quasi-systems become more important and can have a substantial settlement activity. Already, the CPSS/IOSCO Recommendations for SSSs are not confined to systems but are also in part applicable to custodians. Current discussions focus on the possible need to go further and to apply a so-called functional approach to settlement service providers, implying that comparable standards should apply to entities exercising comparable functions and whose overall systemic risk level is considered to be equally high. Precise criteria which should be used to decide on the systemic relevance of the entities concerned still have to be agreed upon.

Conclusion

The creation of a more integrated environment for the post-trade handling of securities is an important prerequisite for obtaining a truly integrated EU capital market by 2005, as envisaged in the European Commission's action plan. Today, the clearing and settlement of domestic trades between local participants is well organised. However, the settling of EU cross-border trades via the same channels is generally perceived to be inefficient and too expensive.

Some twenty central securities depositories, each holding domestic securities, are active throughout the EU. This causes considerable direct and indirect costs for intermediaries, investors and issuers.

To give the integration movement a chance, there is a general consensus that the solution should be market-led but that the authorities should step in if necessary. One important way to bring down the cost is to make securities clearing and settlement systems interoperable, giving investors or their agents comparable access to different systems.

Furthermore, a market-led solution requires that the existing barriers to competition should be abolished. These barriers are known, as the Giovannini reports identified the market practices, tax-related procedures and legal issues involved. The removal of these barriers should ultimately lead to a free choice of settlement location for the investor and the issuer.

For securities clearing and settlement services, both consumption network externalities and production economies of scale are present. Their existence might ultimately lead to the emergence of very large service providers, and eventually, to a regional or EU-wide monopoly. In that case, there is a risk that the users of the system will not get the full benefit of the enhanced clearing and settlement services structure, and there is a need for devices to prevent this.

On the one hand, settlement systems themselves and custodians should have the right to access the services of the registrar CSDs that are perceived to be essential facilities,

i.e. the securities book transfer function and the communication of corporate actions. Without non-discriminatory and fair access to these functions, competition will be restricted. When this condition is fulfilled, settlement systems will be truly able to compete with each other and with custodians. Likewise, under this condition, a vertical silo of trading-clearing-settlement that is owned by an exchange, would not be able to hinder competing rivals and the overall integration movement.

On the other hand, since a monopolistic entity – such as an SSS – might let its own interests prevail, there must be an appropriate system for balancing the stakeholders interests. It will be of utmost importance to structure the governance properly so that users have a say in the design and management of the SSS.

Besides efficiency concerns, soundness considerations will shape the clearing and settlement industry. Authorities must pay particular attention to the low probability risks of catastrophic events that could destabilise the whole financial system. The CPSS-IOSCO Recommendations on securities settlement systems do cope with this concern in both a domestic and a cross-border context. In a cross-border context, links between systems should be soundly constructed. Furthermore, when systems integrate, it is necessary to take account of the fact that any default will have a potentially bigger impact. Finally, in a changing environment, clearing and settlement service providers equalling or exceeding the importance of some SSSs from a systemic risk point of view should be asked to comply with standards comparable to those imposed on SSSs.

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