CNMV
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Securities clearing, settlement and registry systems in Europe. Current situation, ongoing initiatives, and recommendations

Joint report by the National Securities Market Commission and the Bank of Spain

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Executive summary

This report is the result of coordinated work by the Bank of Spain (BE) and the National Securities Market Commission (CNMV) to study the challenges facing Spain as a result of developments in the industry and public initiatives in Europe in the area of post-trading. This report analyses the current status of clearing, settlement and registry systems in Spain as compared with Europe, the scope of the Markets in Financial Instruments Directive (MiFID), of the Code of Conduct and of the Target-2 Securities (T2S) project, and their implications for the Spanish system.

One basic conclusion is that certain specific features of the Spanish clearing and settlement system need to be changed so as to make it more efficient and secure, and the changes must be addressed as soon as possible so as to effect them in the near future. The need is heightened by the challenges posed by the initiatives cited above. European integration also raises other questions that must be answered not just in the Spanish context but also Europe-wide.

To tackle these questions, a number of proposals are addressed in Chapter VI which deal with:

Ongoing initiatives in the European Union (EU):

1. Support the T2S project. Examine how it fits with multilateral trading facilities in equities.
2. Create a joint CESR-ESCB working group to organise coordinated supervision and surveillance of securities settlement.
3. Ensure that the Spanish authorities' capacity to supervise post-trading activities is not impaired.
4. Recommend an assessment of the links that can be established between market operators (including Spain's BME) on the scope of the Code of Conduct.

Harmonisation of European regulations:

5. Support the promulgation of a specific Directive on clearing, settlement and registry that adequately covers:

- The allowed level of risk for infrastructures and the establishment of uniform conditions for hedging them.
- Regulation of securities registry.

6. Europe-wide harmonisation of the role of international custodians in the notary functions with regard to final ownership of securities.

Specific features of the Spanish system:

7. Transfer the process of identifying trades and owners from the stock exchanges to Iberclear.
8. Change numerical tracking of ownership based on the *Referencias de Registro* (RRs).
9. Change the time at which equity trades executed in the markets become final.
10. Evaluate the viability of establishing a central counterparty (CCP) in Spain for equities.

Other possible improvements to Spain's post-trading system:

11. Encourage a transfer to AIAF of the fixed-income trading currently conducted on the stock exchanges and unify all the securities of the same type under a single settlement and registry system.
12. Encourage and ensure that Spain's post-trading system implements measures for handling the buying counterparty in naked short sales.

Introduction

The BE and the CNMV have established a working group to study the challenges facing Spain as a result of developments in the industry and public initiatives in Europe in the area of post-trading[1]. The group has analysed the current situation of securities clearing, settlement and registry systems in Spain in comparison with the rest of Europe, the scope of MiFID, the McCreevy Code and the T2S project, and their implications for the Spanish system.

In the past, post-trading infrastructures for transferable securities have been closely linked, if not combined with, trading infrastructures. Over time, specialisation has led to unbundling of the various post-trading processes and they are now offered separately: clearing, settlement and registry/custody.

The process of financial globalisation that emerged at the end of the last decade, coupled with the introduction of the euro, led to concentration of markets Europe-wide, and to greater integration of infrastructures within countries. For example, in Spain the BME group was created by integrating the trading and post-trading infrastructures into a single undertaking. Iberclear was established as Spain's central securities depository (CSD) to manage the two major securities settlement systems[2] in Spain, one for fixed-income securities and the other for equities.

In recent years, post-trading has seen a constant process of change driven by both the private and public sectors. In the private sector, there has been a degree of concentration of post-trading service providers. Nevertheless, the European clearing, settlement and registry business is still fragmented, with many infrastructures having a national monopoly and acting under their specific domestic legislation.

For example, Deutsche Börse, Borsa Italia and BME use only the post-trade infrastructures that they own.

Other major players that, unlike the aforementioned three, are not vertically integrated tend to use preferentially, if not exclusively, the services of a specific post-trade infrastructure; for example, Euronext (now NYSE Euronext) practically confines itself to LCH.Clearnet as clearing house and Euroclear for settlement and

1. Post-trading is taken to mean clearing, settlement and registry of securities
2. The Barcelona, Bilbao and Valencia Stock Exchanges maintain their own securities settlement systems.

registry of securities; also, the two big bourses in the OMX group (Stockholm and Helsinki) use NCSD as their central depository[3].

The result of these factors is higher costs of cross-border trading in Europe, as evidenced by a number of surveys which show that costs are much higher than in the US.

There have recently been a number of public initiatives to find mechanisms for greater integration: MiFID, the Code of Conduct promoted by European Commissioner McCreevy, and the T2S project, whose common goal is integration of financial services within the EU.

All these initiatives seek to increase competition in securities markets by measures to reduce costs while improving efficiency, price transparency and interoperability between the various market structures. In short, to give users of these services real freedom of choice.

Nevertheless, it should be noted that the industry is being driven towards a more competitive framework without there being a common regulatory framework; i.e. each country maintains its own regulations on securities clearing, settlement and registry.

Whereas infrastructures that provide post-trading services face a number of risks (credit, price liquidity, custody, operational and legal) that can be propagated to the financial system, for which reason they are viewed as being of systemic importance, it should be noted that there is as yet no Europe-wide harmonisation of the regulations regarding acceptable risk levels and risk mitigation mechanisms. The lack of harmonisation creates other risks due to differences in the regulations that can lead to regulatory arbitrage and may mean that these infrastructures' service providers do not compete on an equal footing.

In this context, this document analyses the scope of post-trading services in Europe, and in Spain in particular, as well as it addresses the initiatives that are under way and their consequences for the Spanish industry, the areas where improvements could be made, and measures that could be adopted to face the challenges.

Initiatives under way in Europe

The first such initiative is MiFID, which addresses two issues. It allows equities to be traded outside regulated markets, and it entitles market participants to choose their clearing and settlement system, subject to certain conditions.

3. At December 2006, NCSD, LCH.Clearnet and Euroclear were independent players and were not controlled by any of the market groups to which they provided post-trading services.

The second initiative under way is the Code of Conduct promoted by Commissioner McCreevy, which is a private self-regulatory approach. Though initially dealing only with equities, it is expected to be extended to all securities. The Code of Conduct aims to foster price transparency and attain full interoperability between infrastructures (within and between trading and post-trading) by establishing links but without considering their development costs. The Code does not address the issue of legislative harmonisation and, therefore, does not guarantee equal treatment of all infrastructures in a competitive environment. Although the impact of an initiative of this type is difficult to assess, most of Europe's infrastructures have signed it.

Finally, the Eurosystem has launched the T2S (TARGET2-Securities) system aimed at creating a single IT platform for the settlement of securities in euro central bank money; the system would be owned and operated by the Eurosystem. The initiative involves keeping settlement separate from registry, which would continue to be performed by CSDs. This project, which is currently in the initial phase of drafting user requirements, overcomes the problem of interoperability identified in the Code of Conduct as far as settlement systems are concerned, and makes it possible to exercise the rights granted under MiFID by concentrating settlement in a single platform.

Based on an initial theoretical assessment, and given that each initiative enhances aspects of the others, the combined impact of these three initiatives on the financial system will foreseeably be greater than the sum of their individual impacts. For example, the Code of Conduct strengthens features of MiFID, and T2S allows the maximal interoperability in settlement proposed by MiFID and, very particularly, by the Code of Conduct.

Impact of those initiatives on the domestic front

The various ongoing European initiatives dealing with the securities industry will have a significant impact since they represent a major change in the way the business is carried on. Some of the initiatives raise the need to review the features of existing post-trading processes. Spain's fixed-income settlement system is quite similar to those of other markets; however, its equities settlement system differs notably, making it more difficult to fit in with the rest of Europe.

In Spanish stock market, which deals primarily with equities, post-trading settlement and registry are very closely linked to trading. Moreover, the regulation governing this area has specific features that make it different from other systems. The main differences are in the finality and underwriting of securities transactions at the moment of trading, regardless of whether there are securities or cash at the moment of settlement, and also in that debits to securities accounts are conditional upon the presentation of *Referencias de Registro* accrediting the balance in each security. Another difference is that Spain's regulations on securities' clearing, settlement and registry are broader than those of other countries.

Therefore, the specific regulations and procedures of the Spanish stock market's clearing and settlement system represent a barrier, to an extent. In the current European context, it would be advisable to review some features of Spain's post-trading model, specifically the aspects that may impair its competitiveness and its ability to interface with the aforementioned initiatives, and to evaluate the advisability and objective circumstances in which they could be mitigated or, if it were considered appropriate, suppressed partly or wholly.

It would also be advisable to continue supporting, in the various European forums, the establishment of a specific European regulation on clearing, settlement and (in particular) registry so as to establish basic common ground rules on organisation, acceptable risks (particularly in clearing and settlement) and the nature of securities holding, deposit and custody.

Finally, close attention should be paid to the movements and developments in Europe arising from these initiatives, and the challenges facing the Spanish industry need to be anticipated.

Structure of the report

This document comprises six chapters. The first chapter defines the functions and risks in post-trading. The second describes the current situation in Europe, while the third deals with the regulatory framework, identifying the public goals in this area, the key aspects of European regulations, and the peculiar features of Spain's regulations. The fourth chapter presents the ongoing European initiatives and the fifth tries to assess their impact on post-trade infrastructures in Europe, particularly in Spain.

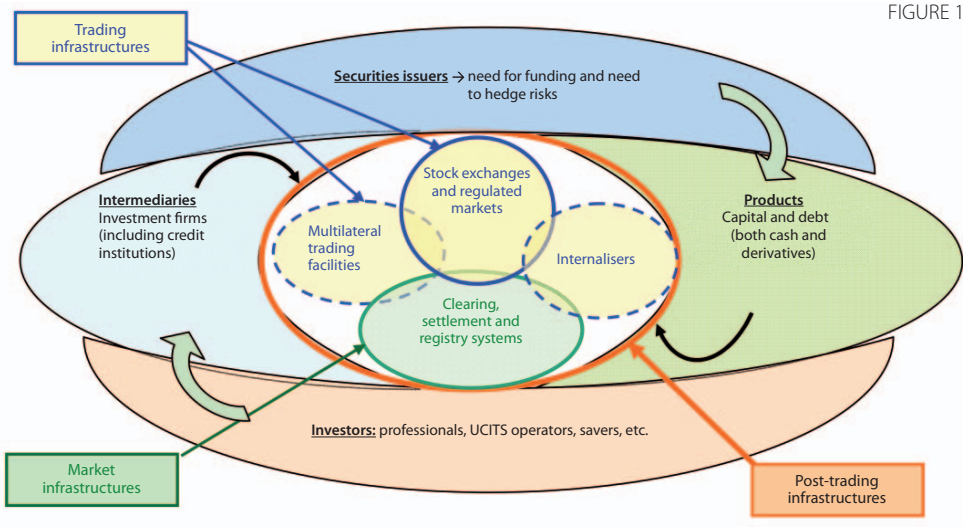
The document concludes with a number of possible measures that might be used to make the Spanish system more efficient and prepare it to compete on better terms and, ultimately, contribute to Europe-wide financial integration.

I. Post-trading and its infrastructures

I.1. Post-trading functions or processes

The securities markets are configured as two large families of infrastructures, having regard to the stages of the process that runs from searching for a counterparty for a purchase or sale to conclusion of the transaction with the transfer of legal title to the securities to the buyer and payment to the seller. These infrastructures can be classified into two types: trading and post-trading.

FIGURE 1



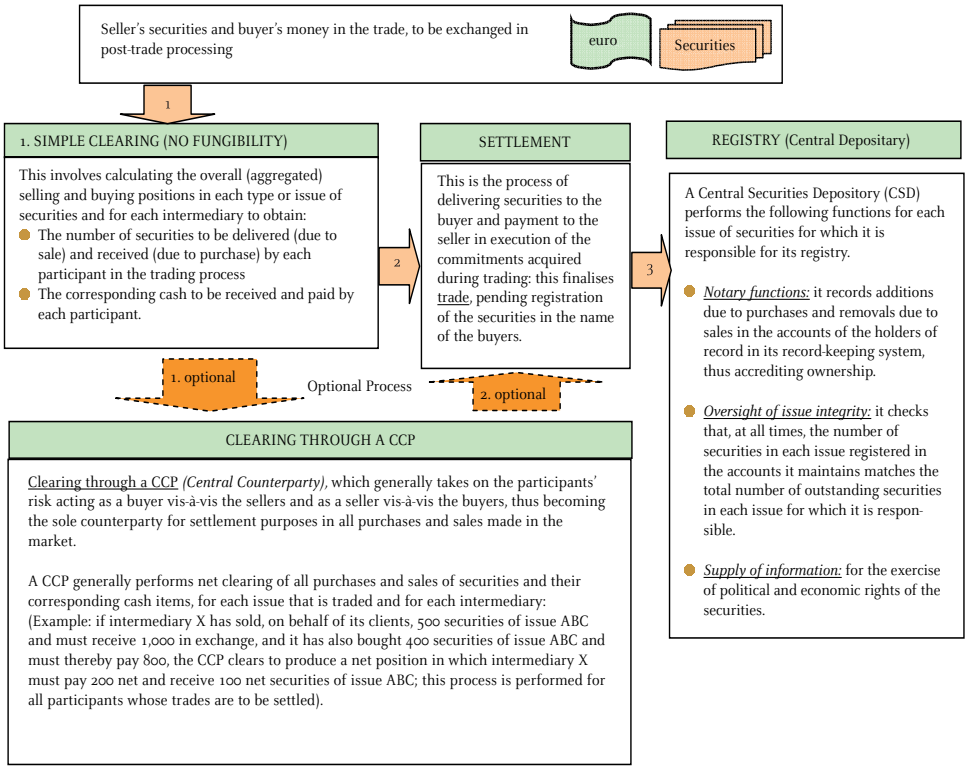
Trading infrastructures are physical or virtual environments where supply and demand for financial instruments (hereafter "securities") come together and agree on trading conditions: amount, price, buyer and seller. The operators of such infrastructures determine what securities can be traded (listing), what parties can enter buy and sell orders (intermediaries which are authorised to become market members), and what rules apply to trading (price changes, pre-opening and pre-closing auctions, etc.). The official or regulated markets in shares (stock exchanges), in debt and in futures and options are classic examples, but there are other legally-recognised forms such as systematic internalisers and multilateral trading facilities.

The trading infrastructures match buy and sell transactions, but the transactions are completed and achieve finality in the post-trade infrastructures, which handle the process of delivery versus payment and accredit the buyer's legal title to the securities.

Post-trading takes place in three distinct consecutive phases or processes: (1) clearing, (2) settlement, and (3) registry. These processes can be performed by the same party or by different parties.

The figure below summarises the phases of post-trading activity:

FIGURE 2



Clearing:

This is generally defined as the process of transmitting, reconciling and, in some cases, confirming the instructions for payment and transfer of securities and its purpose is to determine the final securities and cash positions to be booked after the settlement phase; to that end, the total cash payable (receivable) and the number of shares to be received (delivered) is calculated for each participant and each issue of securities traded in a given market session.

This calculation can be done trade-by-trade (in gross terms), resulting in settlement in those same terms.

It can also be performed in net terms, which produces the net balance of mutual obligations between buyer and seller, resulting in a single obligation between the two counterparties. Net clearing can be performed bilaterally, by grouping trades between two counterparties, or multilaterally, by grouping all the participants' trades vis-à-vis all other participants, resulting in each participant's net position vis-à-vis the system. In fact, three standard methods of clearing are used by European clearing houses. The three methods are all focused on preparing for settlement under the principle of Delivery versus Payment (DvP):

- *Gross securities/Gross cash.* Each trade is treated individually and the securities and cash to be delivered are calculated for their gross amount on a trade-by-trade basis.
- *Gross securities/Net cash.* For all trades by each participant, the securities to be delivered and received are treated on a trade-by-trade (i.e. gross) basis while the cash is netted to a single position for the amount receivable or payable.
- *Net securities/Net cash.* The net securities and cash positions to be exchanged by each participant are calculated for each issue traded in each market session.

Clearing services may be provided by undertakings that are dedicated solely to that purpose (clearing houses) or by a central securities depository (CSD) or international central securities depository (ICSD[4]).

Clearing services may also be provided by a CCP[5] which is interposed between the parties in a trade, acting as a buyer vis-à-vis the seller and as a seller vis-à-vis the buyer, thus absorbing the parties' counterparty risk and guaranteeing completion of the trade. When, in this interposition, the rights and obligations of the original trade are extinguished and replaced by new ones vis-à-vis the CCP, this is called "novation". Most CCPs also perform full clearing on a net basis of both cash and securities with a view to the subsequent settlement process[6].

Settlement:

This is the asset exchange phase, when each participant delivers (or receives) the securities and receives (or delivers) the cash, in the amounts calculated in the clearing phase.

4. Entities which hold and administer securities and enable transactions to be processed by book entry. In addition to holding issues and administering securities accounts, CSDs normally provide clearing and settlement services. ICSDs settle trades in international securities and some domestic securities, normally using direct or indirect (via local agents) connections with domestic CSDs.
5. Central Counterparty.
6. Exceptionally, MEFFCLEAR, the Spanish CCP for Repos, was not authorised to perform net clearing when it was constituted.

Securities settlement in Europe is generally performed by CSDs or ICSDs, although it is also performed by specialised clearing entities that are not CSDs (local or global custodian banks[7]).

In order to control the counterparty risk, most trades are performed on a DvP basis, i.e. the securities are transferred only if payment is made, and vice versa. It is also possible to transfer securities without a cash movement (free of payment) or against the transfer of other securities (delivery versus delivery).

In this way, global custodians can handle sales and purchases by clients and internalise settlement on their books if both parties have securities and cash accounts at the custodian; as a result, no movement of securities or cash takes place in the central settlement system. In some settlement systems, the local custodians that act as settling members of the central system can also clear and settle trades between their clients on their own books; however, in contrast with the previous case, they must first notify the central system of the net outcome of the clearing and settlement process and then report the details.

Collections (payments) are generally made by a cash credit (debit) in the accounts of a predetermined settling bank that is generally a central bank. However, some major systems allow the use of accounts at commercial banks or on their own books in the case of a CSD with a banking charter; this introduces an additional risk factor into the settlement process.

Once the assets have been exchanged satisfactorily in the securities and cash accounts, the settlement attains legal finality and the assets may be used without restriction to settle other trades. Finality is normally attained when the cash and securities are exchanged; however, in some systems the key milestone is the moment when the securities are registered in the buyer's name.

As in the case of clearing, settlement can be performed on a gross basis, trade by trade, or net, and this may be done continuously or discretely (i.e. batch mode). Three basic forms of settlement are recognised internationally:

- DvP1: gross securities/gross cash, or
- DvP2: gross securities/net cash, or
- DvP3: net securities/net cash.

7. Custodians recognised as such by a CSD are normally financial institutions authorised to provide securities safekeeping and depositary services for third parties. They are generally trading and/or settling members, resident or otherwise, which are authorised and recognised in the corresponding market. Local custodian is the name normally given to those which give clients access to securities located in their country's CDS, whereas global custodians can provide access to securities located in CSDs in other countries (by participating directly or acting through local custodians).

	Aut	Bel	Che	Deu	Dnk	Esp	Fin	Fra	Gbr	Grc	Irl	Ita	Lux	Nld	Nor	Prt	Swe
DvP_1		yes	yes	yes	yes	yes		yes	yes	yes	yes	yes	yes	yes		yes	yes
DvP_2	yes	yes		yes		yes	yes	yes							yes		
DvP_3	yes				yes					yes		yes		yes		yes	

Although the same model is usually applied to clearing and settlement, there are cases where trades can be cleared by pure netting (DvP3) but the output or net position of each type of issue traded and cleared (securities and net cash to be delivered or received) by each participant is settled gross (position by position).

Registry of securities:

This is the final phase, where the settled purchases and sales are entered in the owners' accounts. In most European systems, securities are represented by book-entries, and record-keeping and safekeeping are performed by a CSD and its members (intermediaries recognised by the CSD as custodians).

A CSD performs four basic functions:

- It keeps individual and, possibly, global accounts of third parties holding securities in each issue for which it is responsible for registry. Depending on the legislation governing the CDSs, they may recognise only the final owners of the securities or they may recognise a chain of intermediate holders prior to transfer of title to the final owner. Accreditation of ownership, a function referred to generally as "notary functions", is another activity associated with registry and attributed to CSDs.
- It oversees the integrity of all issues registered in its system.
- It supplies information to facilitate the exercise of economic (i.e. dividend) and political (i.e. voting and information) rights (see figure on page 14).
- It facilitates the transfer of securities by means of book entries (trade settlement).

Owners of securities gain access to CSD services via intermediaries which are members. Those intermediaries ("custodians") keep the securities on behalf of their owners and usually provide interest and dividend management services.

There are two basic models of organising a central registry system: single-step (direct holding) or multi-step (indirect holding).

– Under the direct holding system, the depository directly keeps all the accounts (one account per issue and per owner) with the position (number of attributed securities) of all the issues and all the persons who are owners of record of any

security registered in accordance with the prevailing legal system. This is the system used in Greece and the Scandinavian countries.

– Under the indirect holding system, the depository keeps two types of accounts in its central record (first step): (i) a detail of the securities in each issue that are held by each of the system's participants; and (ii) an omnibus account for third parties (total number of securities) held by each member (custodian) for each issue. The custodians maintain the breakdown of the third parties' individual positions (second step). Ownership is reflected in the detail accounts: those of the members, in the first step, and those of third parties, in the second step. This is the case of such countries as France, Italy and Spain, among others.

It is notable that there is no standardisation at European level of the registry systems or of the legal treatment of securities positions held for third parties by intermediaries or members of a given CSD. In summary, the following situations can arise:

- Jurisdictions where registry is centralised and performed by a CSD that can delegate sub-custodian functions to private-sector institutions while retaining responsibility for the registry system.
- Others where the custodians are not acting under delegation or outsourcing agreements with the CSD but are directly entrusted with the function and responsibility for securities custody while the CSD exercises oversight, i.e. oversees transaction integrity.
- And in some jurisdictions, third-party securities custodied by financial intermediaries that are members of a CSD are legally classified as being off-balance sheet deposits in the name of their owners. Such deposits do not form part of the intermediaries' assets and, in the event of insolvency on the part of the intermediary, may be separated and transferred to another institution (as is the case in Spain).
- In other systems, third-party securities are included in the assets of the custodian institution in the form of omnibus accounts, on a trust basis, and the third parties have rights as the ultimate owners of the rights to those securities. In those jurisdictions, it is also feasible for securities to be kept separate in the event of custodian insolvency, but the legal process differs significantly in form and substance from the previous case.

I.2. Factors of competition and risk in post-trading

One feature of post-trade infrastructures is the general tendency to combine processes in one or a small number of institutions, thereby creating monopolies or oligopolies. These systems benefit from scale economies and network exter-

nalities or economies of scope. The incompatibilities between the procedures used by the various infrastructures also tend to cement the status quo of the existing systems since it is difficult for new entrants to attain a critical mass of members that would enable them to compete with the incumbents' scale economies.

The search for scale economies and network externalities has led some systems, particularly the ICSDs, to complement their core post-trade service offering with value-added services such as banking (intraday or overnight credit, margin trading, etc.) and value-added custodian services (administration and management of shareholders' meeting attendance fees, issuance of reports on key shareholders, dividend management, etc.).

Some regulators are wary of post-trade infrastructures providing non-core services for two reasons. Firstly, because they may assign resources to non-core services to the detriment of their core services; and secondly, because the provision of core services may not be sufficiently isolated from the risk associated with the non-core services. Also, when offering financial services, the ICSDs are competing with the global custodian banks, which coordinate the post-trade operations of a given international investor in many CSDs (where they are recognised as custodians), avoiding the need for the investor to resort to an ICSD.

The various phases of securities post-trade carry risks for the participants and for the financial system as a whole; consequently, post-trade infrastructures are viewed as being of systemic importance. The main risks are those related to (i) credit, (ii) price liquidity, and (iii) custody, followed in importance by (iv) operating risks due to faults in procedures, hardware and processes, and, finally, (v) legal risks.

Credit risk is one of the main risks associated with settlement. It arises when any of the participants fails to deliver or pay, particularly as a result of insolvency. The first mechanism for mitigating counterparty risk is based on the generalised use of the DvP principle (i.e. securities are only delivered upon payment) by post-trade infrastructures. More recently, counterparty risk has been addressed by implementing central counterparties.

Liquidity risk (associated with the market price risk) arises when the seller or the buyer cannot fulfil their commitments at the agreed time and may be forced to resort to other transactions (potentially involving price risk) in order to overcome the temporary mismatch until settlement is completed at a later date. In order to mitigate the problems arising from short-selling and price changes, settlement systems require deposits and margins (based on the market value of the open interest) and offer mechanisms for providing liquidity, such as securities loans and intraday and overnight loans.

Custody risk is the risk that the securities in custody will be lost due to insolvency, negligence, malfeasance, deficient administration or inappropriate maintenance of the records. This risk is greater when the securities are deposited or recorded at private sector undertakings that are not solely engaged in securities custody. The risk is mitigated by ensuring that there are proper accounting mechanisms, practices and procedures (segregation of assets in custody, regular reconciliation of positions, use of encryption and authentication) and by giving proper preferential treatment to assets in an insolvency situation.

Operating risk arises when there are losses due to breakdowns in technical systems, organisation or management, or there are human errors. These failures usually entail legal risks due to civil liability in the event of interruption or breakdown of post-trade processes.

Legal risk arises when there is a lacuna or a contradiction between the rules and practices of the clearing and settlement system and the laws of the land. Although this risk tends to be underestimated, the low degree of harmonisation in the field of securities ownership and the legal nature of the custody of third parties' securities by intermediaries may lead to "non-recognition" (in jurisdictions where CSDs manage notary functions centrally) of the beneficiaries to whom the intermediaries attribute, in their omnibus accounts, the various rights deriving from ownership of the securities in custody. This risk can also refer to "non-recognition" between jurisdictions of the result of the process of separation or rescue of securities in the event of insolvency by the firm.

Moreover, lack of harmonisation between notary functions can lead to a shift in custody from jurisdictions where CSDs (with the assistance of their member firms) manage ownership centrally under positive law to jurisdictions where private-sector custodians have more power to recognise transactions and reassign rights under market practices that are more acceptable under common law.

In a world where sophisticated financial engineering transactions are proliferating, it would be advisable, not to say necessary, to harmonise what is meant by ownership and who are acknowledged as possessing its inherent benefits. Particularly critical in the case of shares are the growing number of equity-swaps, empty voting[8] and other complex transactions in shares where there may be a mismatch between the party exercising voting rights and the party holding the economic rights and risks and even the parties who formally hold title to the shares.

Considering also that securities accounts are often managed under trust via lengthy chains that are very difficult to trace and audit, where the custodians are the ones

8. Lending of shares on a purely temporary basis in order to vote in a Shareholders' Meeting, after which the shares are immediately returned to the lender; the borrower takes on the voting rights but the economic risks of ownership are retained by the lender.

assigning and accrediting rights and profits in complex transactions without going through the filter of a CSD (rights that may not be recognised in other jurisdictions), the result is a notable increase in the risk of loss of control over the ownership of the capital of listed companies and a definite threat to the basic functions normally attributed to CSDs.

II. Current situation of post-trade in Europe

Integration of European providers of market infrastructure services has taken place in two forms: horizontal integration and vertical integration.

In vertical integration, the same group controls a range of undertakings whose combined activities cover most or all of the value chain of services comprising transactions in securities (1. trading, 2. central counterparty, 3. settlement of securities and cash, 4. CSD).

Such a vertical structure may be headed by an exchange (e.g. Deutsche Börse) or a holding company (e.g. Spain's BME). This type of structure, referred to as a "silo", arose from the fact that, in the past, clearing, settlement and registry functions were associated with trading since they came into being as supplementary services that were necessary to ensure finality of trades. Both types of infrastructure shared a large number of participants, who were also shareholders; they finally decided to integrate the various market services under a single roof in order to obtain scale and scope economies by concentrating trading and post-trade services in undertakings bound by commercial and ownership links.

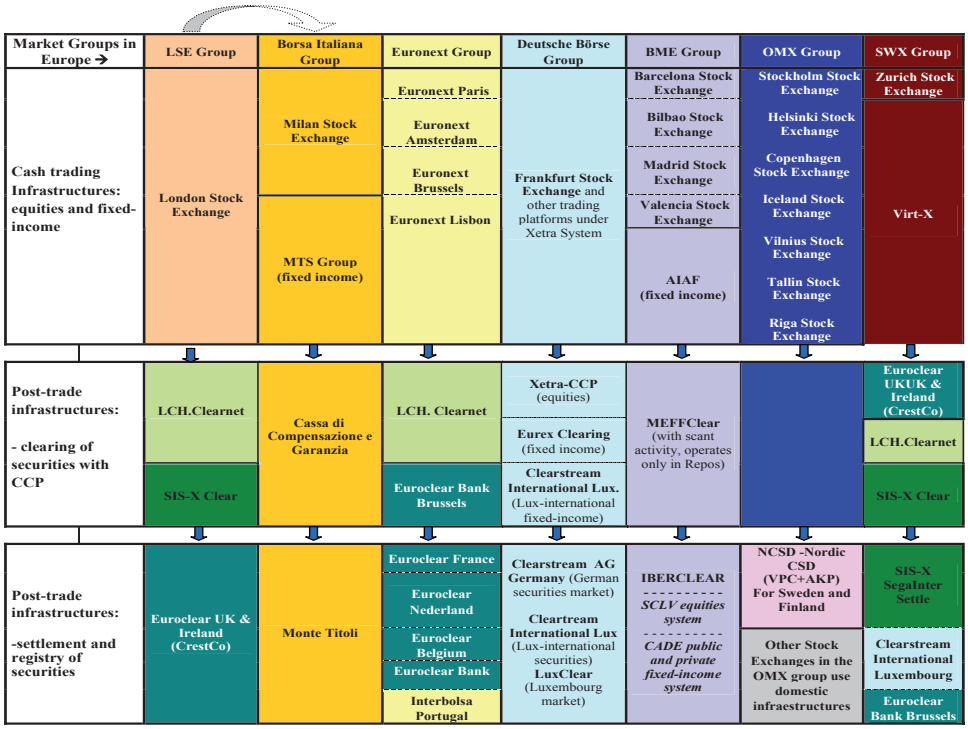
In the horizontal model, integration takes place between undertakings performing the same activity (e.g. trading only, or post-trade only). For example, the Euroclear group comprises CSDs from a number of countries; it does not provide trading services. The Euronext group of markets (currently NYSE Euronext) basically offers trading services, but does not offer clearing, settlement or registry.

Table 1 shows a map of the main post-trade infrastructures in Europe that provide services to the big seven trading infrastructures in Europe. This table shows the relations between the two types of infrastructures, the services they provide, and who owns them. The four post-trade infrastructures not wholly integrated into (i.e. controlled by) any of the big market groups[9] in Europe at present are: (i) the Euroclear group, which has commercial ties with the Euronext group (which has a minority stake in Euroclear); (ii) the SIS group, owned by a consortium of Swiss banks; (iii) NCSD, which is the result of merging the Sweden's and Finland's central securities depositories, and is used exclusively by the OMX group's two big markets, i.e. the Stockholm and Helsinki stock exchanges; (iv) the LCH.Clearnet group, which

9. Although they do have strong commercial ties with them.

TABLE 1

(Boxes of the same colour indicate that they are owned by the same group)



Source: firms' annual reports and web sites.

could be classified as independent at December 2006[10], which provides clearing and CCP services (it may be Europe's leading provider in this area) in post-trade of shares traded on the Euronext group's markets, the London Stock Exchange (LSE) and Virt-X, owned by Swiss group SWX.

It is evident also that Deutsche Börse, Borsa Italiana[11] and BME use only post-trade infrastructures which they control (vertical integration); and Euronext uses the services of Euroclear almost exclusively although there is no situation of control. OMX's Swedish and Finnish bourses use the post-trade services of NCSD alone. LSE accepts several clearing houses and has announced it will admit more settlement firms[12], whereas until recently CrestCo (now Euroclear UK & Ireland) was the sole provider of settlement services to LSE, and it will probably continue as the exclusive central registry CSD provider. The clearest exception to the pattern of working exclusively with one post-trade infrastructure is the Swiss SWX group, whose parent

10. In December 2006, its largest shareholder, with almost 30% of capital (but capped at 24.9% of voting rights) was the Euronext group; Euroclear owned approximately 15%. The remainder was owned by its users. There is also an agreed process under way to reduce the percentage owned by those groups and the stock exchanges and to increase the percentage owned by users.
11. LSE completed the acquisition of Borsa Italiana on 1 October 2007.
12. Clearstream, which is part of the Deutsche Börse group, has applied for recognition in the UK to provide services to LSE.

company is not resident in the EU. However, full entry into force of MiFID and the implementation of the McCreevy Code of Conduct will result in the admission of other providers of post-trade services.

The importance of post-trade infrastructures within the securities market infrastructures overall can be observed (Table 2 and Fig. 3) by comparing their revenues and EBIT with those of the trading infrastructures they serve. Europe's top two clearing and settlement infrastructures are Euroclear and Clearstream (in descending order)[13], followed by LCH.Clearnet. These infrastructures owe their leading position and commercial reach to the fact that, in addition to core post-trade services, they also offer banking and other value-added services which other infrastructures are unable to offer due to restrictions in their Articles of Association or legal constraints. Those three leaders are followed at a considerable distance by the other infrastructures, headed by those of Italy and Spain.

Post-trade volume is a good indicator of the actual size of Europe's securities markets (Fig. 2) since many trades taking place outside the regulated markets attain finality in the post-trade infrastructures. For example, bilateral and multilateral trades in fixed-income securities executed outside regulated markets and internalised trades in shares, which do not yet appear in the regulated markets' statistics, are reflected in the post-trade infrastructures' processing statistics.

A comparison of post-trade volumes in equities (the securities where trading is most concentrated and for which data is most accessible and reliable) reveals that the post-trade infrastructures owned by, or with commercial links to, the market groups shown in Fig. 2 process a much larger number of trades, and a much larger volume, than are handled by those regulated markets.

It should be noted that little information is available about post-trade business and it is not always homogeneous or comparable; there is relatively more information available about clearing and settlement, whereas registry is much less transparent.

Consequently, because of the scant data, it is useful to compare the European post-trade infrastructures' revenues and EBIT as well as those of the trading infrastructures which they serve. Figures 3 and 4 and Table 3 were drawn up with this purpose, and they illustrate the current situation.

13. Part of the growth in post-trade business arises from the capacity to settle or support the settlement of international trades through direct links between CDSs or ICSDs, whether unilateral (by opening accounts as participants in other CSDs) or bilateral (reciprocal accounts), or through indirect links, using a custodian bank (acting as clients of an indirect member of the CDS/ICSD) or through a third CSD operating between the two (relayed link). At present, the only direct link with capacity to settle trades DvP is that established between the two ICSDs. The other direct links only support FoP settlement. Ultimately, a CSD can operate directly as such, as a member of another CSD (client CSD) or as an intermediary (relay).

Post-trade cash securities infrastructure activity - 2006

TABLE 2

Trillion euro

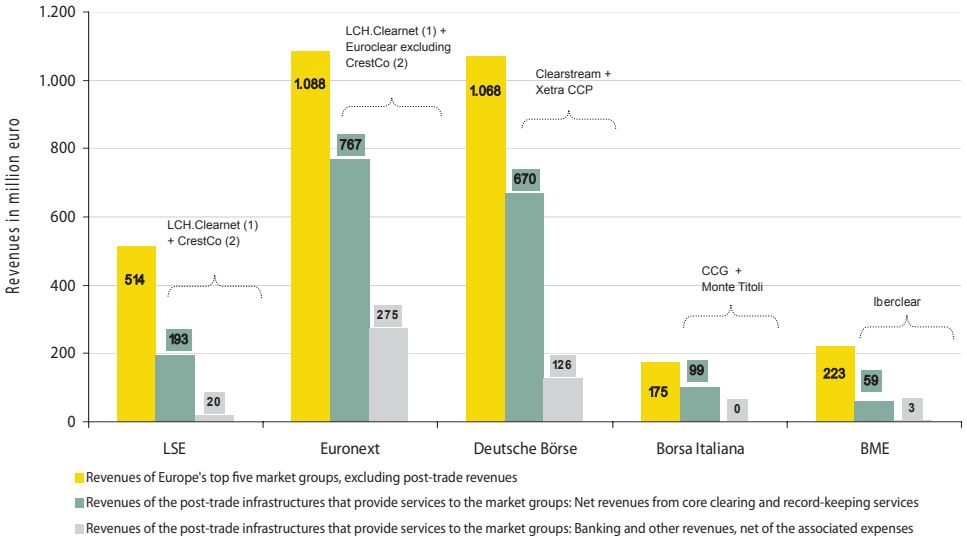
Trading Infraestructures	LSE	Euronext		Deutsche Börse	Borsa Italiana	BME
Flow: equity electronic trading volume	2.2	2.4		1.6	1.1	1.2
Flow-No. of equity trades (million) Electronic and others	78.2 elect. 16.5 others.	104.5 elect. 0.7 others		53.1 elect. 55.9 others	57.5 elect. 0.07 others	23.2 elect. 0.2 others
Balance-share market capitalisation	2.9	2.8		1.2	0.8	1.0

Post-trade infrastructures associated with trading infrastructures	Euroclear UK & Ireland	Euroclear excluding UK&IRL	LCH.Clear-net[3]	Clearstream	CCG+MT	Iberclear
Flow-Total settled volume	144.8	306.9	Total [3]500 Fixed-inc [3] 8.8	N/A	N/A	N/A
Flow-Total no. of equity and fixed-income trades settled (million)	70.0[1]	75.0[1]	Total [3]1270 Equity [3]198	62.9	57.1	34.6
Total cash balance (equities and fixed-income) of securities registered in custody	Total 3.8	Total 14.4	N/A	Total 9.7	Total 1.9	Total[2]1.74 Equities[2] 0.78 Fixed-inc 0.96

Note 1: The figures are for settled trades net of those cleared beforehand.
Note 2: Cash value calculated by the CNMV; Iberclear only publishes nominal amounts (not so useful).
Note 3: LCH.Clearnet's published figures give only limited breakdowns. The "Total" figures include operations with shares (equities), fixed-income securities, financial derivatives, and commodity and energy derivatives, so they are not comparable with those of other infrastructures. The breakdown of cleared equity trades is as follows: 110mn in Euronext, 77.6mn in LSE, 10.4mn in Virt-X.
Source: Data obtained from annual reports and web sites, except for note 2.

Comparison of revenues from cash trading and post-trade processing of securities of Europe's top five market groups: 2006

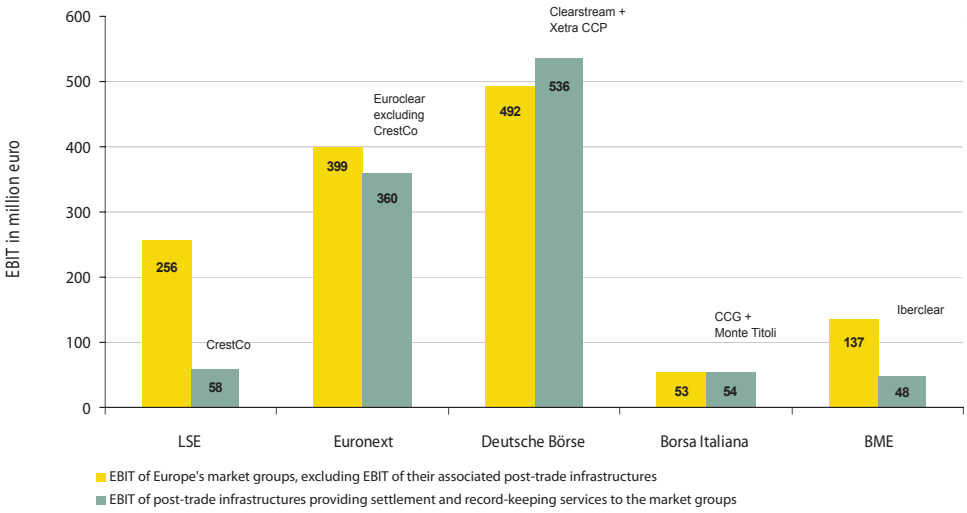
FIGURE 3



Note (1): LCH.Clearnet's revenues refer solely to clearing cash equities (€154mn), and fixed-income cash and repos (€24mn), i.e. a total of €178mn for clearing. The breakdown of these revenues and of the core and non-core services to LSE and Euronext was based on the number of trades cleared on Euronext and LSE as a percentage of total equity clearing.
Note (2): The breakdown of revenues at LSE and Euronext was based on information in Euroclear's 2006 annual report.
Source: Data obtained from annual reports and web sites.

Comparison of EBIT from trading and post-trading of securities of Europe's top five market groups: 2006

FIGURE 4



General note: The figure does not include LCH.Clearnet's EBIT since it is not possible to separate the amount of EBIT due to cash trading from that of financial, commodity and energy derivatives.
Source: Data obtained from annual reports and web sites.

Breakdown of post-trade revenues of the main infrastructures: 2006

TABLE 3

	Euroclear	LCH.Clearnet Note [1]	Clearstream + Xetra D Börse Group	CCG + Monte Titoli; B. Italiana Group	Iberclear BME Group
CORE SERVICES (million euro)	**802**	**386**	**786**	**99**	**52**
Custody	427	n/a	434	40	
Settlement	244	n/a	236	24	46
Clearing		**Total 364** Commod. derivat. 68 Financial derivat. 118 Cash equities 154 Cash fixed-income 24 Total cash 178		35	n/a
Global securities financing			40		
Other service revenues	131	22	76		6
BANKING AND OTHER SERVICES (million euro)	**271**	**58**	**10**	**0**	**9**
Banking (interest and fees) and other service revenues	**517**	**791**	**151**	**0**	Other **9**
Banking financial expenses (associated with generating banking-financial revenues)	-246	-733	-141		
NET REVENUES	**1.073**	**444**	**796**	**99**	**61**

Note (1): These net revenues comprise the activities of LCH.Clearnet in the segments of (i) cash equities, (ii) fixed-income (cash and repos), (iii) financial derivatives and swaps, and (iv) commodity and energy derivatives. The figures that are most comparable with those of other infrastructures in this table are cash equities (€154mn) and part of the fixed-income cash and repos (€24mn), totalling €178mn (more comparable than the net revenue figure of €444mn).
Source: Data obtained from annual reports and web sites.

III. Regulatory framework

III.1. Public objectives in the area of clearing, settlement and registry

Post-trade services are subject to regulation whose main thrust is to prevent systemic risk and protect investors. This approach is justified by the fact that settlement entails risk that can become systemic, and registry is fundamental to protecting investor rights.

Consequently, the regulations generally include requirements for the establishment and operation of post-trade infrastructure with the aim of achieving secure, efficient settlement. The process must also be fully auditable to facilitate ex-post supervision of the infrastructure. Accordingly, clearing, settlement and registry tend to be subject to strict rules and surveillance with the aim of ensuring that those objectives are attained to a high degree. For example, the rules on settlement require guarantees to ensure the delivery of assets, cover the risk of open interest and avoid undesired consequence of failures. Regulations governing registry and custody are focused on establishing preventive measures such as separation of accounts, as well as appropriate oversight, regular reconciliations or audits of external securities, although few jurisdictions establish solvency requirements based on the value of the securities in custody.

These goals are shared by all national regulators and supervisors, particularly in the developed countries; Spain's regulations governing CSDs is actually more demanding than the EU average.

Financial integration and the establishment of an open market in services with competition between suppliers and participants is viewed as a priority goal by the EU. However, the lack of common regulations throughout the EU makes it difficult to achieve that goal since national authorities can object to the use of foreign post-trade infrastructures on the grounds of pursuing stability and orderly working of their domestic markets.

The European Commission (EC) acknowledges that cross-border operations by post-trade infrastructures make the operating and solvency risks more complicated, requiring the utmost oversight and vigilance to ensure integrity.

To date, the EC has focused on attaining market integration and, to this end, it is seeking to eliminate barriers to competition. This goal is evident in MiFID (rights of

access to systems) and in the Code of Conduct (see section IV.1), which is a private accord rather than an official regulation.

III.2. European regulations

The basic regulations on post-trade are set out fundamentally in the Member States' domestic legislation since the only areas covered by EU legislation are addressed in the following two directives[14]:

- *Directive 98/26/EC of 19 May 1998 on Settlement Finality in Payment and Securities Settlement Systems*, whose basic goal is to ensure finality of orders to transfer cash and book-entry securities in a clearing and settlement system so that the transfer orders are binding and legally enforceable and, above all, that the collateral provided in such systems in favour of third parties is protected against insolvency proceedings.
- *Directive 2002/47/EC on Financial Collateral Arrangements*, which seeks to ensure that collateral arrangements, either in the form of pledge or when they contain a transfer, are effective and enforceable, to which end the protection provided in the aforementioned directive is extended to collateral arrangements in order to provide legal certainty throughout the European Union for collateral arrangements in the form of cash or securities.

Apart from the relative lack of European regulations, the fact is that, up to now, existing regulations have mainly focused on providing legal certainty and protecting participants in clearing and settlement systems, while ignoring the sensitive area of registry. Those participants include the BE, the ECB and the big international custodians, which required a stable, solid framework that avoided legal risks in firm's securities positions that might produce potentially systemic solvency risks.

Consequently, European regulations have confined themselves to addressing issues that are important for the legal protection of third parties (generally wholesalers) and have not covered issues that are vital for the efficiency and security of the clearing, settlement and registry systems, such as price transparency, organisation requirements, operating risks, and oversight by the competent authorities. Little reference is made to some of these issues; in fact, the Finality Directive merely states that "Member States may impose supervision or authorisation requirements on systems which fall under their jurisdiction".

MiFID fails to make significant progress in this area, even though it introduces rules that may potentially affect clearing and settlement (registry is excluded). MiFID's

14. The Directive on Settlement Finality, transposed into Spanish law by Act 41/1999 on Securities Payment and Settlement Systems, and the Directive on Financial Collateral Arrangements, transposed by Royal Decree-Act 5/2005, of 11 March, in its Chapter II (contractual clearing and financial collateral arrangements).

basic objectives with regard to integrating and opening Europe's financial markets are as follows: (i) create competition between clearing and settlement systems by breaking up possible monopolies arising from relations of exclusivity between markets and post-trade systems; and (ii) ensure investment firms have freedom of access to all the clearing and settlement systems existing in the EU.

In fact, the few initiatives seeking to harmonise basic aspects of clearing and settlement risk and the regulations governing these processes have all been of a consultative non-binding nature. These include the CESR-ESCB group[15] which made efforts towards harmonisation by defining standards in some of these areas, but which have not been approved to date due to lack of agreement. Nevertheless, ECOFIN has acknowledged the importance of taking specific steps to address post-trade risks and financial stability in order to complement the Code of Conduct.

There are also two international initiatives addressing the issue of rights attributed to securities in the custody of intermediaries; if approved and ratified, they will represent a significant part of the regulatory edifice in the area of notary functions with respect to securities in the clearing, settlement and registry systems. The scope and consequences of these two initiatives are such that they merit comment:

- *The Hague Securities Convention*: this international treaty, which has yet to be ratified by many countries, including the EU countries, addresses the law applicable to certain rights in respect of securities held with an intermediary, but it does not harmonise substantive regulations of the Member State that may ratify it. It confines itself to stating what legislation applies in the event of dispute, the default being the law of the state expressly agreed upon by the parties (provided that the intermediary has an operating base in that State for managing securities accounts). Absent a specific agreement, the applicable law is that of the home country of the financial institution with which the contract was arranged or, otherwise, that of the country where the intermediary is legally established or operates.

  The Convention's rules for establishing the applicable law differs from the Community *acquis*, which is based on the country of the account (not the country agreed upon or the intermediary's home state); for that reason, several EU Member State have expressed reservations about approving and ratifying the Convention. It is not clear whether the EC will ultimately propose that the Convention be signed with specific amendments to ensure that a settlement and registry system does not have accounts that are subject to different legislations, an eventuality that might raise serious systemic risk problems. The EC is working on a possible update of the

15. In October 2001, CESR and ESCB established a joint working group to develop "Standards for securities clearing and settlement systems in the European Union". The group's consultation document, released in September 2004, was drafted on the basis of recommendations made by CPSS-IOSCO in 2001; it includes 19 standards covering such aspects as the legal framework, settlement mechanisms, securities lending, corporate governance, user protection, and links between settlement systems.

PRIMA principle and analysing the best solution for addressing conflicts of laws in the area of securities deposited with financial intermediaries.

- *Unidroit Convention on Intermediated Securities*: this is currently being negotiated, and its goal is to define a common substantive regime governing the essential aspects of holding and transferring intermediated securities. It covers the exercise of rights by securities account-holders, the integrity of the link between open accounts and securities held by an intermediary, some measures to protect account-holders in the event of insolvency, the exercise of rights by trustees, and a minimum set of rules for financial collateral arrangements made with respect to securities accounts. If it is ultimately signed, this convention will affect the EU rules set out in the Directives on Finality and Financial Collateral. It would not have a major impact on the Spanish system since it would apparently not alter the current legal regime on securities ownership. The draft convention opts to allow the domestic rules regulating CSDs to take precedence over those of the convention itself. One of the exceptions, which merits attention, is the possibility for nominees to exercise economic and political rights of the securities they hold, and that this exercise may be partial or even contradictory (segmented voting) depending on the orders received from the final owners.

III.3. Spain's regulations and their specific features

Spain's regulations are broad and cover practically all aspects of securities clearing, settlement and registry. Some aspects need to be updated, basically to conform to EU legislation.[16]

In principle, the basic characteristics of fixed-income clearing and settlement in Spain can be considered to be homogeneous with those of the rest of Europe, insofar as fixed-income trading systems are pretty uniform throughout Europe.

The same cannot be said of equities, since the trading models in Europe are the result of the history and specific features of each country and each exchange; consequently, they are not homogeneous. In fact, there is a considerable disparity in equities trading models, ranging from price-driven markets to order-driven markets, with distinctive variations in between.

16. Spain's regulations on clearing, settlement and registry are set out in Act 24/1988, of 28 July, on the Securities Market, and its secondary legislation on the subject of clearing, settlement and registry and on the subject of central counterparties in the derivatives markets, as set out in Royal Decree 116/1992, of 14 February, on the representation of securities by book-entries and the clearing and settlement of stock market trades, and in Royal Decree 1814/1991, of 20 December, regulating the official futures and options markets; (secondly) in Royal Decree 505/1987, of 3 April, on book-entries of government debt; and (thirdly) the implementing regulations and rules (circulars, technical standards, communiqués, instructions, etc.) of Iberclear and MEFF.

The main differences between Spain's regulations on equities clearing, settlement and registry and those of the main EU Member States can be summarised in five key features:

1. The first difference lies in the legal configuration of stock exchange trading. The 1967 Stock Exchange Regulation (*Reglamento de las Bolsas de Comercio*) does not allow trades to be annulled and, consequently, the Regulation of the SCLV[17] established that stock exchange trades are final from the moment they are executed. This has a number of consequences:

   - The rights associated with the securities being acquired (day T) are acknowledged at that time for the purposes of mercantile legislation (Code of Commerce, Companies Act, etc.), without having to await settlement and payment (T+3), since the model assumes that the trade will always be settled on T+3 upon exchange of cash and securities.
   - All trades executed in a stock market session must necessarily be settled. The basic assumption, enshrined as a basic principle, is that all trades acquire finality, i.e. that all securities traded in a market session must be, and are, settled on time. To that end, the post-trade infrastructure (Iberclear) and its members must necessarily ensure that settlement takes place, since it is not permitted to annul a trade due to settlement failure.
   - Since the guiding principle is that delivery is assured, it was traditionally considered unnecessary and burdensome to establish a central counterparty for equities; consequently, Spain's equities settlement system does not have this risk mitigation mechanism. As an alternative, all participants in the Spanish system must post collateral to cover, on a joint and several basis, the monetary risk of settlement failure.

2. Settlement of securities trades in the stock exchanges is multilateral, since trading is also multilateral. Consequently, it is obligatory to be a settling member (participant) of Iberclear in order to be a member of any Spanish stock exchange. This is logical since, as all trades must be settled, if a settler other than the market member refuses to settle the trade, then responsibility for settlement falls on the trading member, which must also necessarily be a settling member of Iberclear.

   For that same reason (multilaterality), although every participant in settlement provides collateral to the system to cover the risk it introduces, any shortfall in the collateral must be covered, temporarily for each session, by the other participants[18]. The mechanism for providing collateral for equities settlement is designed so that, while based on a system of individual cover, the combined collateral provided by the participants is joint and several in nature, which is logical in a multilateral system in which all trades must necessarily be settled on T+3.

17. SCLV, the former securities clearing and settlement system now integrated into Iberclear.
18. In practice, if the collateral needs to be used, it becomes available on the day after settlement (i.e. T+4)

3. Royal Decree 116/1992 requires that, in the case of equities, Iberclear must make credits and debits in the securities accounts conditional upon the issuance or revocation of *Referencias de Registro* (RRs or Registry References), and it requires Iberclear and its members to have a file of RRs supporting the balance in each security. The stock exchanges[19] assign an RR in each session for each trade; it then refers the RR to Iberclear as a basic factor for settling the session in gross terms (trade by trade). To settle purchases, it is only necessary for the buyer to deliver the corresponding cash, which enables the RRs relating to the corresponding securities to be assigned.

   However, to settle sales, it is necessary to deliver the specific itemised RRs that evidence that the securities to be deregistered were registered in the seller's name at the time of the sale (it is not sufficient to use any RR or a generic balance of RRs). In a balance-based system (the standard approach in Europe), the trade is conditional only upon the seller holding a sufficient balance of the security in question.

   Although the system is more complex and cumbersome than a batch-based approach or netting, it is designed to provide a high level of traceability so as to ensure that surveillance is as effective as possible. Also, since the RRs are what make up the record of securities kept by Iberclear, the settlement and registry system is much more interdependent than in other Europe countries.

4. The fourth difference referred to above is the broad scope of Spain's regulations governing post-trade infrastructures in nearly all areas (authorisation, organisation, control of prices, limits and risks in operations, processes, supervision, etc.) when compared with the scant regulation at European level and in other domestic jurisdictions. The result is that the system is secure and has had few notable failures, but it is viewed by participants (particularly foreign participants) as being more complex and cumbersome, which may lead to regulatory arbitrage.

5. The fifth difference, this time with respect to standard practice in the English-speaking world (not with respect to the rest of Europe), is that there is no recognition of nominee ownership and the fact that Iberclear exercises centralised control over notary functions even if it delegates book-keeping of third-party accounts to its member firms. In fact, somewhat over 50% of the volume of purchases and sales on the Spanish stock market are by non-resident investors, with ownership registered mainly with an intermediary acting more or less implicitly as a nominee, which creates problems in reconciling the register of owners of record with other legal obligations regarding transparency in the disclosure of significant holdings and in who holds the votes in listed companies.

19. In contrast to fixed-income, where the process of identifying trades to be settled is performed by the CADE system and its members (which handle their clients' trades).

This phenomenon, discussed at the end of chapter I.2, is a serious problem which has been aggravated in recent years by the lack of worldwide harmonisation and the scant EU regulation on this area; the result is that certain common law practices and concepts regarding custody are being exported into the positive law systems of the Continent. The result has been a steady undermining of the control and accreditation of ownership as managed centrally by Europe's CSDs in a transition to a decentralised model with multiple global custodians which, through concatenated chains of nominees, make it difficult to obtain a reliable picture of the identity of non-residents holding stakes in listed companies.

The lack of European directives and regulations (and of harmonisation on a lower level) with regard to securities custody is a problem that needs to be addressed; however, the disparity between the various legal systems indicates that such harmonisation may be lengthy and complex. This issue also clearly needs to be addressed in Spain's domestic legislation since the supervision of holdings and the knowledge about specific holders of significant positions is poorer than it was a decade ago: this risk needs to be addressed in other jurisdictions too, since the phenomenon is not confined to Spain.

IV. Ongoing initiatives in Europe

IV.1. The Code of Conduct promoted by the European Commission (EC)

This Code of Conduct seeks complete interoperability between all trading infrastructures and all post-trade infrastructures, and among the latter.

One of the goals of the EC's initiatives is to increase efficiency in clearing and settlement by introducing full competition and cutting the cost of cross-border trading (both cited in the Giovannini Reports as existing barriers in this sector). In this context, the EC has considered the possibility of drafting a Directive on clearing and settlement (this project was included in the EC's work plan for 2006). However, when it reviewed the plan in July 2006, the Commission decided to shelve the idea of the directive in view of the proposal of a voluntary code of conduct for the industry[20] which would include initiatives to improve competition and reduce costs.[21]

The Code was announced by Commissioner McCreevy in July 2006 and was published in November 2006[22].

The Code consists of a number of voluntary measures. It refers mainly to post-trade processing of equities but is expected to be extended in the future to cover other financial assets. It refers specifically to: (i) clearing and central counterparty clearing services by CCPs and some CSDs; (ii) settlement and custody services by CSDs, and, to an extent, (iii) trading activities. The Code also states that it must be applied by all parties involved in those functions, even if they are not signatories. The measures contained in the Code of Conduct are structured in four blocks:

1. *Price transparency*: all affected entities had until 31 December 2006 to disclose information on their web sites about: (i) all offered services and their respective prices including applicable terms and conditions; (ii) discount and rebate schemes and the applicable eligibility criteria; and (iii) examples that explain prices for dif-

20. Represented by the following organisations: Federation of European Stock Exchanges (FESE), European Association of Central Counterparty Clearing Houses (EACH) and the European Central Securities Depositories Association (ECSDA).
21. In May 2006, the EC published a report on post-trade in Europe which noted, among other factors, that a cross-border trade costs six times as much as a domestic trade.
22. European Code of Conduct for Clearing and Settlement, 7 November 2006.

ferent types of customers. They were required to distinguish between one-off fees and regular fees, and between prices for custody and additional services.

2. *Access and interoperability*: by 30 June 2007, the Code required conditions of access and interoperability to be established so as to enable any trading or post-trade infrastructure to access any other such infrastructure, either as a direct participant or through bilateral agreements to establish operating links.

   Access criteria must be transparent and non-discriminatory, applications for access must be decided upon promptly, and the process must be public. Access to another infrastructure will depend not only on the existence of business for the applicant but also on it fulfilling the legal, tax and regulatory requirements that apply in the infrastructure to which it is seeking access. Access must take account of the provisions of MiFID[23].

   Interoperability makes it possible for clients to choose the service provider because it facilitates the establishment of technical and operational mechanisms between infrastructures (e.g. Spain's official markets, such as the Stock Exchanges, allow part of their trades to be settled in a foreign infrastructure such as Euroclear or Clearstream, in addition to Iberclear[24]).

3. Service unbundling and account separation: should be operational by 1 January 2008. Service unbundling will allow clients to pick and choose, while account separation offers relevant information about clients. Both initiatives pursue transparency in costs and revenues in the various services, so as to detect cross-subsidies and enhance competition.

4. Monitoring of compliance with the Code: to be performed by the organisations themselves, assisted by external auditors, the EC (DG COMP and DG ECFIN) and other public sector interlocutors.

By the date of this report, practically all the markets and post-trade infrastructures located in Europe had signed the Code of Conduct, since most members of FESE, the clearing houses that are members of EACH, and the CSDs that are members of ECSDA had signed up, with the result that non-EU jurisdictions such as Norway, Switzerland and Russia are also participating.

IV.2. The Eurosystem's initiative: TARGET2 Securities (T2S)

In the framework of preparations to launch the Eurosystem's new T2S payment system, it became clear that greater harmonisation would be required in the settle-

23. Articles 34.2 and 46.2 of MiFID (existence of links and mechanisms between systems that ensure effective trade settlement).
24. This is relatively unrealistic given the links between Spain's trading and post-trading infrastructures, but what the Code seeks is for such alternatives to be possible.

ment of securities trades in Europe. In this context, the T2S project arose in July 2006 with the goal of offering CSDs a service allowing both domestic and cross-border settlement of securities in euro central bank money in single platform that would settle both securities and cash (i.e. an integrated model). The platform, to be owned and operated by the Eurosystem, would be confined solely to settlement. It involves separating settlement from other registry and custodian services, which would continue to be provided by CSDs, i.e. securities administration, management of economic and corporate rights, relations with issuers, securities lending, etc.

It would be a service offered by the Eurosystem to CSDs and, indirectly, to their members; i.e. CSDs would be the clients and a direct connection would be established between them. Subject to prior agreement with the CSD, provision will be made for members to communicate directly with the platform, if authorised by their CSD. In any case, T2S will respect relations between CSDs and their members with regard to securities, just as it will respect the pre-existing relations between each central bank (CB) and its counterparties with regard to cash. The securities accounts will be kept on T2S and will be attributed legally to each CSD, which will retain legal liability for opening, maintaining and closing its members' securities accounts.

T2S is both voluntary and neutral. It treats all participants equally, regardless of their size, which is a factor to consider in an increasingly competitive industry. This initiative of the central banks is also widely supported by the financial institutions, pending the final design. The European institutions and bodies have also welcomed the initiative.

Nevertheless, the CSDs view T2S with caution because of the evident impact it will have on their business by significantly changing the ground rules. The T2S project requires the CSDs to relinquish management of settlement, but not of the associated business relationships; this is tantamount to abandoning settlement, a lucrative business currently provided by the CSDs. It may also lead to holding of securities being concentrated in a few CSDs. The project has been criticised on the grounds that the Eurosystem is interfering in a business currently carried on by the private sector.[25]

Functional architecture

The most innovative feature of T2S is that it requires the CSDs to delegate management of securities and cash accounts to the central banks.

T2S proposes to settle securities in accordance with the BIS's optimised DvP1 model. The platform would have optimisation mechanisms and algorithms to facilitate

25. Some central banks manage public debt settlement systems (Belgium and Greece, within Europe, as well as the US and Japan), but settlement of cash equities and fixed-income securities is mainly performed by the private sector.

settlement of the securities (for managing queues, chained trades, technical netting, etc.) and cash (automatic provision of intraday credit or self-collateralisation). With these mechanisms, T2S aims to facilitate settlement of those markets that still use some form of net settlement and do not have a CCP (e.g. Spain).

From the beginning to end of the settlement session, all trades will be settled on the T2S platform. The T2S system will operate day and night to handle settlement of cycles currently in place at some CSDs (e.g. Iberclear) for settlement after market close or during the night.

As for the type of securities susceptible to inclusion, CSDs that decide to participate in T2S will transfer settlement of all euro-denominated trades in securities to the platform. That is to say, DvP and FoP settlement, such as transfers and changes of account that do not involve a cash payment, that deal with equities, fixed-income securities, UCITS and warrants would be carried out on the T2S single platform.

T2S's main activity is settlement, a function that covers a range of tasks such as order reception, validation and matching, ensuring that the balances are sufficient, and making the corresponding entries in the accounts in accordance with the DvP principle. T2S will offer a matching service for trades between CSDs and for trades between participants connected directly to T2S. It will also offer matching of domestic trades, which will be optional for participants. In any case, CSDs will be able to send T2S trades that are already matched and are just pending settlement (e.g. the case of stock exchanges and MTFs, and trades from a CCP).

All securities accounts and balances registered by CSDs that are members of T2S will be entered in a securities data base on the T2S platform which will be connected with the settlement engine; the latter will make credits and debits to those securities accounts and automatically update the balances. Participating CSDs will be the only ones with access to the section of the data base holding their accounts; accordingly, each CSD will remain formally liable for managing its records and keeping such accounts. The CSDs and their members will have real-time access to the securities account balances.

Evolution of the project and work in progress

In 2007, an operational, technical and economic viability study was conducted which enabled the ECB Governing Council to decide that T2S is viable and to commence the project's first phase; no legal obstacles of any sort were identified that would prevent the project from being implemented. This project is currently in the initial phase of drafting user requirements; this phase commenced in May 2007 and is scheduled to be completed in spring 2008, following public consultation. In the summer of 2008, the ECB Governing Council will foreseeably decide whether to proceed to the next phase, i.e. implement T2S.

The user requirement phase is being conducted in close cooperation with the interested parties. An Advisory Group was established comprising representatives of the central banks, the CSDs and users. Also, six technical groups (TG) were established, with representatives of all interested parties, to draw up specific parts of the user requirements. The TGs report to the Advisory Group, which is the body entrusted with presenting the user requirements to the ECB Governing Council. In implementing this project, it would be desirable to increase participation by national securities market supervisors and by post-trade infrastructures.

Also, some major issues remain to be addressed, such as the future governance structure, an update of the initial economic study that was performed as part of the viability study, the extent to which T2S will allow CSDs to reduce their current settlement infrastructures, and options to be provided to users whose CSD decides not to participate in T2S.

V. Impact of European initiatives on the industry

It is clear from the foregoing descriptions that the securities industry in Spain must face the changes taking place in Europe. The general framework in which the securities markets operate is changing continuously. In the specific area of clearing and settlement, the three initiative (MiFID, Code of Conduct and T2S) herald major changes with respect to the current situation in Spain, where infrastructures have been working basically in a domestic context. The impact of each one is analysed below.

V.1. Impact of MiFID

- MiFID provides freedom to choose the clearing and settlement system for trades and also allows a given security to be traded outside regulated markets, i.e. in multilateral trading facilities, via systematic internalisers, and OTC. The departure from the principle that equities trading must be concentrated may detract business from the regulated stock markets and make it difficult to maintain certain characteristics of Spain's registry and settlement business.
- The right to choose the settlement system is predicated on the existence of efficient, economical mechanisms and links between settlement systems and on the prior recognition by the supervisor of the corresponding regulated market that the alternative settlement system does not perturb the operation of the regulated market. Considering the requirements of the current system of registry for equities in Spain, those pre-requisites may, in practice, limit access to Spain's registry system and hamper the exercise of the freedom of choice that is granted by MiFID; accordingly, the Directive's short-term impact will be small, but in the long run the clearing and settlement business in Spain's markets could be affected.
- Nevertheless, the barriers posed by the current requirements for accessing the Spanish equities settlement system coupled with the freedom afforded by MiFID to trade outside regulated markets may lead to greater offshoring of both trading and settlement.

V.2. Impact of the EC's Code of Conduct

- The Code is driving the industry to voluntarily adopt measures that will remove barriers to competition between post-trade infrastructures (barriers identified in

the Giovannini Reports) as a means of facilitating greater integration in this area within Europe. The fact that the Code is a self-regulatory measure has the advantage of agility since it needs less time to implement than a Directive, but it is hard to expect the industry to pursue, on its own initiative, goals that go beyond its own interests.

- Both price transparency and service unbundling will contribute to increasing competition in a business that operates as a natural monopoly in domestic markets and which, partly for that reason, is fragmented in Europe. However, those goals may not be fully achieved since, in contrast with other areas (e.g. banking, investment services, etc.), the European Commission is fostering competition without first establishing certain minimum conditions for operating in any Member State, i.e. without first establishing a basic level playing field:

  a. Infrastructures operate under domestic legislation.

  b. There is no symmetry in the services that infrastructures are authorised to provide or in the levels of risk they can assume.

  c. The absence of a harmonised legal framework also affects important issues such as registry, securities holding systems and the cash settlement of securities trades.

- The Code's basic premise is that an increase in inter-jurisdictional competition between service providers should translate into lower prices for cross-border trades. However, it does not consider that:

  1. Attaining full interoperability between infrastructures will entail costs in developing the connections between systems and in making the necessary adaptations. This fact seems to have been overlooked, and it has been assumed that the benefits for the overall European system of the network externalities and scale economies that will be attained will cover the necessary investment and costs to be incurred by the infrastructures.

  2. Given the initial lack of a level playing field, some infrastructures will have to spend more than others and, since the network externalities and scale economies will take some time to be realised, those infrastructures that experience the greatest increase in costs will probably try to recoup them by passing them on to users, specifically domestic (non-cross-border) investors. This risk is particularly great in infrastructures that have a preferential relationship with their domestic markets and those markets are small or have a large presence of foreign investors (e.g. Spain).

- The Code does not consider aspects relating to registry and ownership of domestic shares settled in another CSD; in particular, it has not considered the effects of the applicable legislation in the home or host Member States. The Code of Conduct states that some signatories may need approval from their supervisor before they can fully adopt the Code or implement some of its provisions. Such approval may be conditional upon guaranteeing security in registry and settlement.

- The Code will require greater cooperation between the supervisors of the infrastructures and the supervisors of securities trading, since cross-border trading will presumably be encouraged.
- Price transparency and service unbundling did not pose major changes in Spain's post-trade system as the members already met these requirements; however, other requirements such as access and interoperability will have a larger impact. Iberclear, the company which operates Spain's post-trade systems, can not refuse to provide services to other post-trade infrastructures, although infrastructures seeking access must fulfil the legal, tax and regulatory requirements applicable to the target organisation.

V.3. Impacts of the T2S project

Impact in Europe

- Harmonisation of the settlement of all securities denominated in euro that are settled in euro central bank money will greatly enhance integration of the euro area's markets in financial services. It can also be extended to other countries in the EU as the corresponding markets and central banks decide to join. T2S has been designed to maximise synergy with other projects such as Target2 and the future model of collateral in the Eurosystem, making it possible to rationalise the financial infrastructure and centralise the management of collateral in the euro area, which will favour greater harmonisation.
- T2S seeks to reduce the current costs of cross-border trades by offering a single settlement price for all securities trades. So far, the ECB has performed an initial economic viability analysis which suggests that the T2S settlement fee could be comparable to the lowest domestic fees existing in Europe. Nevertheless, that analysis is provisional and there is currently a debate as to the methodology for drafting and calculating an update of the initial economic analysis so as to determine the final fee structure. For that reason, it is not clear what the final economic impact will be on users in those markets where costs are relatively low (as is the case of Spain).
- As indicated above, T2S seeks to be neutral and to treat everybody alike regardless of their size, and it complements the Code of Conduct because it offers a response to the complexity of the links between infrastructures that the Code proposes as well as reducing the uncertainty about recouping the necessary investment. Centralising euro-denominated settlement throughout the EU avoids the need for the many parties to invest in cross-connections.
- T2S also facilitates competition by allowing firms to concentrate share holding at the CSD of their choice. This freedom of choice will undoubtedly bring changes in firms' business models.

Impact on domestic operating processes

- The settlement model proposed by T2S is similar to the one currently existing in Spain for private and public fixed-income securities traded outside the stock

exchanges; consequently, bilateral trades in fixed-income securities traded on regulated markets, MTFs and OTC can be transferred to T2S without major changes in the settlement and trading mechanisms. Provision has been made to enable CSDs to perform, during the settlement session and particularly at close, all the necessary procedures to perform functions that T2S will not perform, such as the reconciliation that Iberclear currently performs of the transactions between its member and third parties. Nevertheless, some issues have yet to be agreed upon, such as the deadline for settling DvP trades initiated by CSDs to overcome settlement failures (risk management measures).

- T2S generates greater benefits when settlement of all the CSDs' securities is centralised. Therefore, if Iberclear decides to join T2S, it must contribute all its securities accounts (both fixed-income and equities).

- There could be a major impact on equities traded on the stock exchanges:

  – T2S is expected to use gross settlement in both securities and cash (i.e. DvP1) with the assistance of optimisation techniques (technical netting, intraday credit, concatenated operations) to allow similar levels of efficiency for net settlements (i.e. DvP2 and DvP3). The closer the Spanish stock exchange settlement system comes to the European standard, the easier it will be for it to fit into T2S. Nevertheless, T2S will offer the possibility of multilateral net settlement for markets that do not use a CCP (e.g. retail equities trading), but this will not obviate the need to introduce certain changes in current stock exchange settlement procedures.

  – It may be particularly difficult to adapt Spain's stock exchange settlement system to T2S because of two of its distinctive features: finality at the moment of trading (rather than at settlement) and the process of follow-up and numerical control via RRs (sales are supported by providing previously-registered RRs). Since the T2S project is based on a specific system and method of settlement to which CSDs must adapt when joining, there are no plans in principle to develop specific functionalities to address special domestic features. It will be up to each domestic market to decide on eliminating specific practices that do not fit with T2S.

  – The final legal status of T2S has yet to be decided. This is not a minor issue since the domestic legislation governing CSDs in the various countries gives them the exclusive right to perform settlement and registry of the securities for which they are responsible in the domestic sphere. Since the CSDs that join T2S must outsource settlement to a third party (T2S) and allow it to make changes and modify balances in the securities accounts for which they are responsible, they cannot participate in T2S until its final legal status has been clarified and the necessary amendments have been made to domestic legislation.

Impact on the structure of the post-trade business

- Under T2S, domestic CSDs will be better placed to offer access to all securities in the euro area through connections with the other CSDs, since one new feature offered by T2S is the ability to settle DvP between members of different CSDs in euro central bank money, just as occurs with domestic transactions. To date, connections between national CSDs only supported FoP settlement, meaning that such connections were used very little in practice. Now the national CSDs (including Iberclear) can act for their clients as a single point of entry to all securities in Europe, provided that they are willing to offer the corresponding custody and administration services.

- The strategy to be adopted by Spanish firms will depend on the opportunity of switching settlement from the current system of using local CSDs in other European countries to using a single point of entry to T2S.

- In any case, CSDs in jurisdictions which have a sizeable investment in foreign securities (e.g. Spain) now have a major opportunity to work towards attaining a high degree of centralisation in managing foreign securities in which their members and domestic investors have invested.

- Also, a factor which will negatively impact the business of domestic CSDs and some of the big local custodians is that the big international custodians, whose branches and subsidiaries may be clearing members of the domestic CSDs, will be able to centralise custody of all their securities in Europe in a single jurisdiction. This could be the case with the branches and subsidiaries of the big global custodians that are very active in the local settlement business (this occurs in Spain and other European countries).

Economic impact on a domestic level

- Domestic CSDs that join T2S will lose the settlement function (it is a significant business for Iberclear, the Spanish CSD). Nevertheless, the economic impact will not necessarily be proportional to the loss of settlement revenues since that may be offset by a number of other factors such as Iberclear charging its custodian members a margin on the cost billed to it by T2S, or the possibility of a reduction in costs due to the reassignment of resources to other businesses whose margins may increase (e.g. registry and custody, and the supply of information to the market).

- One of the goals of T2S is to reduce the cost of cross-border settlement, in that it seeks to generate sufficient scale and scope economies so as to attain costs that are lower than those of the current infrastructures. Nevertheless, in those jurisdictions whose local CSDs operate at costs which are notably lower than the EU average (e.g. Iberclear), the impact will need to be analysed in more detail once the final economic analysis of T2S becomes available.

- The date of entry into force of T2S (2013) appears to give national CSDs enough time to recover a substantial part of any investments they have under way. Since future investments in settlement systems will be the responsibility of T2S, European domestic CSDs such as Spain's Iberclear will be able to concentrate resources on the other functions related to securities custody and administration, where more competition can be expected.

- Cost savings for the domestic CSDs due to outsourcing the settlement function will depend to a great extent on the need to maintain their current applications and the necessary data bases and computing resources. Nevertheless, there will also be cost savings for participants due to the reduction in the cost of settlement across Europe, lower cost of managing collateral, and possible savings on intermediation. These savings are difficult to quantify but analyses suggest that they may be significant. All these savings could be passed on to investors.

Impact on domestic supervisors: CNMV and BE

- As regards supervision, in order to avoid the loss of real-time information for tracking trades from end to end, the T2S project must guarantee the necessary mechanisms to enable supervisors to oversee and monitor settlement.

- Settlement of securities on T2S will impact the BE's work, but the BE's active participation in the development and operation of T2S can be viewed as an additional positive factor for the Spanish financial system as a whole.

VI. Initiatives that could be adopted in Spain

The new European initiatives in the area of clearing, settlement and registry are aimed at achieving greater integration of the securities markets and building a framework in which firms compete. Spain's securities infrastructures, specifically that of post-trade, should not remain on the sidelines and should make the necessary changes to adapt to the new framework by adopting solutions that maintain an appropriate level of security and efficiency in clearing, settlement and registry.

In order to face the impending changes in Europe, it is necessary to make a number of decisions so as to bring Spain's current post-trade processes into line with the European standards and practices. Below are a number of initiatives that could be adopted to achieve these goals.

VI.1. Related to the ongoing EU initiatives

1. Support the T2S project as being the most neutral integration project currently in existence, since it will allow the Spanish securities industry to compete on better terms than in the context of the other European initiatives that are under way in the absence of T2S. While the fixed-income side generally poses no problems, in the case of equities it is necessary to guarantee that T2S ensures smooth settlement of multilateral markets.

2. Support the creation of a joint working group comprising the supervisors of the clearing and settlement systems (CESR) and the payment systems (ESCB) with the aim of organising the coordinated supervision and surveillance of settlement in the EU, and closely monitoring the development of T2S.

3. In the process of defining and implementing T2S, monitor to ensure that the CNMV's current powers to supervise post-trade services and their providers are not diminished.

4. Recommend that supervisors assess whether the links that may be established by market operators in the context of the McCreevy Code fulfil the applicable requirements, having regard to the development of the T2S platform.

VI.2. Related to the harmonisation of European regulation

5. Support the promulgation of a specific regulation governing clearing, settlement and registry that addresses the following issues appropriately:

   - Harmonisation of the level of risk that infrastructures are allowed to assume and establishment of uniform conditions for hedging it. As far as possible, the regulation should shield core services from the credit risk of non-core services (e.g. securities and cash lending).
   - Harmonisation of the legal treatment of securities registry, which should continue to be classified as a public-sector activity, with registry for each issue remaining centralised in the domestic jurisdiction where the issue prospectus was filed, the aim being to ensure integrity and appropriate supervision[26].

6. Support Europe-wide harmonisation of the role of international custodians in notary functions regarding final owners; this issue is vital to curtail the opacity[27] existing at present. This has serious implications not only for market supervision but also for the oversight and supervision of the final shareholders.

VI.3. Related to the specific features of the Spanish system

In order to facilitate interoperability between Spain's settlement system and the other systems in Europe, it would be advisable to review and, if necessary, modify certain features. Initiatives that could be considered include:

7. Transfer the process of identifying cash trades in securities and their owners from the stock exchanges to Spain's post-trade system (currently operated by Iberclear).

8. Switch from the current system of numerical tracking of ownership, which is based on providing discrete numerical *Referencias de Registro* before settlement, to another more agile and flexible numerical tracking system, which could be based on netting.

9. Change the time at which equity trades executed in the markets acquire finality from the moment of the trade to the moment when there is certainty as to the exchange of securities and cash.

10. If advisable and viable, establish a CCP for equities in Spain to simplify the pre-settlement processes; the CCP should be capable of processing trades from other markets, both Spanish and foreign.

These measures are by no means simple because of the changes they require in legislation and in technical processes. However, if they are considered appropriate,

26. Some vital issues in the Hague Securities Convention are still pending (see p. 31).
27. Because of chains of interposed nominees acting for unidentified owners and beneficial owners and the use of financial engineering to dissociate securities ownership, the inherent risks and the voting rights, central securities registry systems are increasingly in the dark as to the identity of the ultimate owners.

they should be adopted as soon as possible so that they can become operational in the near future.

VI.4. Other measures in the area of post-trade processing

11. Transfer trading in fixed-income securities on the stock exchanges (electronic market and open outcry) to AIAF and unify settlement and registry of all securities of the same class that are traded in the same way (e.g. cash) in a single system, regardless of the platform on which they are traded.

12. Urge and guide Spain's post-trade system to implement, as soon as possible and with the maximum scope, the necessary measures for handling the buying counterparty in naked short sales, as allowed under the amendment made by Royal Decree 363/2007, of 16 March, to articles 57, 58, 59 and 61 of Royal Decree 116/92 on book entries and clearing and settlement of securities traded on the stock exchanges.