

Expert Group on Market Infrastructures (EGMI)

REPORT

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The report is the result of the work of the EGMI Group. It has been assembled and partly drafted by the Commission services using Members' individual contributions. It does not necessarily represent the Commission's official position, nor does it bind EGMI members or their respective institutions.

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Executive Summary

The past ten years have seen unprecedented focus placed on the importance of post-trade infrastructure to the European economy. This report provides a clear overview of how the efforts to develop a safe and efficient clearing and settlement infrastructure for the EU have progressed and gives an in-depth view of the post-trading landscape by asset class.

Post-trade infrastructure is a difficult and complex subject where finding consensus on the issues and their solutions is challenging. However, the EGMI Group have been successful in communicating both.

This report makes it clear that despite the effort and resources invested in the past decade, there is still considerable work to be done to achieve a truly pan-European post-trade infrastructure that can drive Europe's economic potential.

There is widespread consensus on the need to continue to move forward with this work. The Group has drawn on its considerable skills and expertise from across industry to suggest potential policy options to deliver this.

Introduction

The EGMI Group was formed in 2010 to advise the Commission on various issues in relation to post-trade services and market infrastructures in the EU. The Group consisted of 25 financial market experts and met under the Chairmanship of the European Commission. Professor Alberto Giovannini attended the meetings of the Group as a special advisor.

Members of the Group represented a wide cross-section of stakeholders with diverse interest in financial market infrastructures: trading platforms, CCPs, CSDs, broker dealers, banks, investment firms, corporate treasuries, the legal profession and one non-governmental organisation. This set-up encouraged debate and helped to assess the current state of play of the post-trading landscape in the EU, evaluate past achievements, and identify the work that remains to be done.

Working on post-trading issues presents several challenges: the subject is complex, so there is a danger of getting bogged down in details before identifying the issues that really matter. Stakeholders also have different views as to what exactly these issues are, depending on their place in the overall architecture. Finally, regulatory proposals have either already been tabled, (their outcome is not yet definitive,) or are in advanced stages of preparation.

Against this background, EGMI had the challenge of helping to inform policymakers of where the European post-trading landscape stands and where it should be heading. The Group has met on 5 occasions and provided several informal background papers on a wide range of issues.

The main focus of the EGMI work was on post-trading issues around financial instruments. Issues concerning commodities are outside the scope of the report.

The current report reflects the result of the Group's work. The core part of the report lists three choices for policymakers, ranging from incremental and concrete steps towards more ambitious and finally overall, visionary steps. This is supported by a regulatory gap analysis, which can be found in Annex I.

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Chapter 1: Past EU Focus and Policy Efforts

A Brief Introduction to Market Infrastructures

The public perception of financial markets tends to be of stock exchanges and banks. The role played by exchanges and other trading platforms is the most visible part of Europe's market infrastructure. However, not all securities are necessarily traded on a trading platform (and are defined instead as over-the-counter or OTC), and there are a host of complex infrastructures that sit behind the exchanges usually beyond the public's view.

This changed with the Financial Crisis as the spotlight was thrown onto the importance of post-trade infrastructure to the financial markets. At its most basic, this infrastructure breaks down into two main types based on their place in the process between a trade being made on an exchange and an investor receiving their securities.

Central Counterparties (CCPs) stand at the level of clearing. This establishes that all the prerequisites for settlement are in place by verifying the respective obligations of the buyer and seller of the securities. The CCP acts as a guarantor of the deal against a default by either party by acting as the buyer to the seller and the seller to the buyer. This role makes them shock absorbers of systemic risk and a key focus of reforms to strengthen the financial system.

Central Securities Depositories (CSDs) provide the settlement of the securities. They are mainly responsible for the transfer of the securities from the seller to the buyer by debiting and crediting their respective electronic accounts in a process known as "Delivery vs. Payment" (DVP). This process is essential for efficiency, eliminating risk from the transaction, and providing proof of ownership.

Finally, and most recently, Trade Repositories (TRs) have emerged as an important new infrastructure. TRs centrally collect and maintain the records of derivative contracts. Regulators, CCPs and other market participants will rely on the data maintained by these entities which may also offer associated services such as trade matching, trade confirmation, and portfolio reconciliation or compression.

Lisbon and Lamfalussy

Eleven years ago, the Lisbon Agenda identified that by better allocating capital at lower cost, financial markets "play an essential role in fuelling new ideas, supporting entrepreneurial culture and promoting access to and use of new technologies." This gave financial markets a new prominence in the EU's economic strategy and thinking.

Baron Lamfalussy and his "Committee of Wise Men" were given the task of examining how to address the problems of financial integration in Europe. In addition to streamlining the EU's legislative process, Lamfalussy and the wise men also covered the complex world of clearing and settlement.

In 2001, the final Lamfalussy report took the position that the private sector should be mainly responsible for restructuring clearing and settlement. However, it also identified important public policy issues and asserted that public policy should show a clear lead "if in due course it emerged that the private sector was unable to deliver an efficient pan-European clearing and settlement system for the EU."

Specifically, the report identified the need to focus on excessive costs of cross-border clearing and settlement compared to the US; competition issues such as open and non-discriminatory access to systems; the soundness of technical links between CSDs; the prudential implications of a single central counterparty; and whether clearing and settlement systems should be authorised and supervised according to common European standards. They also suggested that an efficient clearing system was "a public good."

Giovannini and the Barriers

The European Commission reacted to Lamfalussy's recommendations by engaging Professor Alberto Giovannini to lead a group looking at clearing and settlement in Europe.

In November 2001, Giovannini published his first report that asserted that "inefficiencies in clearing and settlement represent the most primitive and thus the most important barrier to integrated financial markets in Europe."

Furthermore, the removal of these inefficiencies was "a necessary condition for the development of a large and efficient financial infrastructure in Europe." This was important because removing the blockages from the financial market infrastructure' plumbing could be a very important engine for unleashing Europe's unexploited economic potential as "well working financial systems tend to be strongly associated with superior economic performances."

The report identified 15 key barriers to an efficient pan-European clearing and settlement system for the EU. These were divided into three categories – divergent technical requirements and/or market practices; differences in national tax procedures; and differences relating to legal certainty.

Giovannini's second report in 2003 then set out an action plan for removing these barriers. The plan specified who would be responsible for removing the barriers and provided deadlines for removal. All the barriers should ideally have been removed within three years of the start of the process.

	Barrier	Industry	Government	Deadline
Technical	1) IT Systems	X		2 years
	2) Location of C&S		X	3 years
	3) Corporate Actions/Custody	X		2 ¼ years
	4) Intraday Settlement	X		2 ¼ years
	5) Remote Access to C&S		X	3 years
	6) Settlement Period	X		2 ¼ years
	7) Operating Hours/Deadlines	X		2 years
	8) Securities Issuance	X		2 ¼ years
	9) Location of Securities		X	3 years
	10) Dealers and Market Makers		X	3 years
Taxation	11) On Foreign Intermediaries		X	2 ¼ years
	12) Tax Collection in Local C&S		X	2 ¼ years
Legal	13) Treatment of Securities		X	3 years
	14) Treatment of Bilateral Netting		X	3 years
	15) Conflict of Laws Rules		X	3 years

European Commission efforts

In parallel to the work carried out by the Giovannini group, the Commission published its first Communication on clearing and settlement in the EU in 2002¹. Building on the Giovannini barriers, it took the position that "All markets, infrastructure providers and market participants should be able to access all necessary systems, regardless of their location. Fully integrated markets require that rights of access to systems be comprehensive, transparent and non-discriminatory and above all, effective."

The Commission followed this up with a second communication in 2004 titled "Clearing and settlement in the European Union – The Way Forward."² It continued to endorse the elimination of the Giovannini barriers and decided not to intervene in the structure of the industry for the moment, taking no position on whether to consolidate existing settlement systems, on the merits of user-owned against for-profit governance structures, and whether to separate the intermediary and banking functions of CSDs.

It set an objective of achieving an efficient, integrated, and safe market for clearing and settlement. This would take the Commission to promote co-ordination between private sector bodies, regulators, and legislators, and regulatory intervention at an EU level through the adoption of a framework directive.

The Commission intended to pursue the following measures and policies:

- a) the liberalisation and integration of existing Securities Clearing and Settlement Systems through the introduction of comprehensive access rights at all levels and the removal of existing barriers to cross-border clearing and settlement;
- b) the continued application of competition policy to address restrictive market practices and to monitor further industry consolidation;
- c) the adoption of a common regulatory and supervisory framework that ensures financial stability and investor protection, leading to the mutual recognition of systems;
- d) the implementation of appropriate governance arrangements.

Following the 2004 Communication, the Commission also established three high-level groups to deal with the removal of the market, legal and fiscal barriers to post-trading: The Clearing and Settlement Advisory and Monitoring Experts Group (CESAME)³, the Legal Certainty Group (LCG)⁴ and the Fiscal Compliance Group (FISCO)⁵.

Each of these three groups provided reports and analysis of the work done to integrate more deeply the post-trading activities.

From a market perspective the CESAME report of end-2008⁶ provided a concise overview of all the work undertaken by the industry to dismantle the six industry-related "Giovannini Barriers" to post-trading.

¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52002DC0257:EN:HTML>

² <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52004DC0312:EN:HTML>

³ http://ec.europa.eu/internal_market/financial-markets/clearing/cesame_en.htm

⁴ http://ec.europa.eu/internal_market/financial-markets/clearing/certainty_en.htm

⁵ http://ec.europa.eu/internal_market/financial-markets/clearing/compliance_en.htm

⁶ http://ec.europa.eu/internal_market/financial-markets/docs/cesame/cesame_report_en.pdf

Significant legislative progress also took place in respect to the public-sector barriers. Public-sector Barrier 14 (on netting) was dismantled⁷ and the Markets in Financial Instruments Directive (MiFID) was implemented.⁸

The Legal Certainty Group provided two successful reports in 2006 and 2008⁹ with advice on harmonising legislation in this area of law.

Finally, the Fiscal Compliance Group also provided two successful reports¹⁰ - a Fact-Finding Study on Fiscal Compliance Procedures in 2006 and a second report on Solutions in 2007. On the basis of these two reports, the Recommendation on Simplified Withholding Tax Relief Procedures, COM (2009) 7924 final was created. After more than 9 years without any progress being made in this area, the Commission in close cooperation with Member States, achieved a well-balanced text outlining how EU Member States could make it easier for investors resident in one Member State to claim entitlements to relief from withholding tax on securities income (mainly dividends and interest) received from another Member State.

In order to identify the remaining issues linked to fiscal compliance procedures and to suggest workable solutions to implement the principles outlined in the Commission Recommendation that might be acceptable for Member States' tax authorities, the Commission created the Tax Barriers Business Advisory Group (T-BAG) in 2010. The Group finalised its work in September 2011.

Calculating the Cost of Fragmentation

Clearing and settlement is characterised by tight margins; low costs are critical to achieving efficiency and accessibility.

In 2006, the Commission published an analysis of the studies of European post-trading costs. There have been many studies done which look at the issues from various angles.

A study by CEPS in 2001 found that:

- Operating income of European CSDs was 2.6 times higher than that of the DTCC, while their operating expenditures were 1.7 times higher than those of the US operator.
- In the post-netting context, EU CSDs' income per transaction was around twice as high as one in the US while in the pre-netting context, it was almost eight times higher.
- In a post-netting context, EU CSDs' expenditure per transaction were 1.25 times as high as those in the US, while in a pre-netting context they were more than five times as high.
- European CSDs registered considerably higher margins between their income and their expenditures than the US DTCC.

Giovannini's first report provided a study that was a variant of the CEPS study, but when compared to the latter, it put a stronger emphasis on the comparison between cross-border and domestic within the EU than between the EU and the US:

⁷ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002L0047:EN:HTML>

⁸ http://eur-lex.europa.eu/LexUriServ/site/en/com/2005/com2005_0253en01.pdf

⁹ http://ec.europa.eu/internal_market/financial-markets/clearing/certainty_en.htm

¹⁰ http://ec.europa.eu/internal_market/financial-markets/clearing/compliance_en.htm

- In the post-netting context, its results for income per transaction were the same as for the CEPS study, while in the pre-netting context, they were lower.
- The study also found that the settlement of domestic securities transaction in the EU appeared relatively cost efficient, while the settlement cost when using ICSDs was relatively high, reflecting the fact that they focus mainly on the cross-border transactions.

The LSE and Oxera produced a study in 2002 that concentrated on pre-netting figures on the basis that they correctly represent the post-trading cost of a single transaction:

- End users in Europe paid close to six times more per transaction than in the US due to higher operating expenditures per transaction in Europe and to higher European margins on each transaction.
- In case a single European system were to handle the current number of transactions at the current DTCC level of revenues per transactions, the cost savings would amount to €1.6 billion in the year 2000. Even in case the current profit margins would remain unchanged, the total annual cost savings would still approach €1 billion. This only refers to the ICSD channel.

Also in 2002, London Economics published a study on the macro-economic impact of integrating the EU's financial markets. The study evaluated the impact of integrating EU stock and bond markets on trading costs and on the cost of capital. In the eventuality that additional costs were discerned, it quantified the consequent impact on investment, GDP, and employment, and highlighted the powerful role that efficient and liquid financial markets could play in complementing bank-based finance to support growth and employment in the EU. It found that the benefits of greater integration in the EU financial market, caused by a combined reduction in the cost of equity, bond, and bank finance, together with the increase in the share of bond finance in total debt finance were:

1. the level of EU-wide real GDP was raised by 1.1%, or €130 billion in 2002 prices, in the long run;
2. the EU GDP per capita in 2002 prices was €350 higher;
3. total business investment was almost 6% higher and private consumption increased by 0.8%; and
4. total employment was 0.5% higher.

Another study was conducted by the Eurogroup in 2002 on behalf of AFTI. This found:

- Domestic trading costs were similar between Europe and the US. While the large bulk of the fees related to brokers, costs related to CSDs only made up about 4% of the total.
- The fact that cross-border trades were more costly than domestic ones was attributed to the higher fees charged by custodians for cross-border trades (2.5 to 4 times higher than the domestic).

In 2002, Clearstream also conducted its own study on secondary cash equity markets, including the analysis of the whole value chain of trading and post-trading activities. Its key conclusion was that the excess cost for cross-border post-trading in the EU amounted to around €2 billion per year; of these, €1 billion were explained by higher CSD and settlement agent costs and €1 billion by higher custody costs.

NERA provided a study in 2004 that compared the clearing and settlement costs of equity transactions and payment methods. It found that:

- Clearing and settlement for a single domestic exchange traded equity transaction

cost €0.35-0.80 compared to the US where it cost €0.10. This was largely as a result of US scale advantages.

- The costs of using an ICSD depended on whether the transaction could be settled internally or whether it had to be settled externally. While costs for internal settlement could be below €1 per transaction, costs for external settlements could be over €35.

In 2005, Euroclear carried out its own study. This found that cross-border settlement was inefficient. Annual excess costs from these inefficiencies for market participants were estimated to be around €5 billion. Of the total costs of cross-border settlement, ICSDs and CSDs accounted for 2.5% each, local agents for 35%, and costs related to additional back office facilities for around 60%.

As part of its 2006 analysis of studies, the Commission also conducted its own study which concluded that a cross-border equity transaction in Europe costs investors between two and six times more than a domestic transaction. The Commission found that the average excess cost of cross-border equity settlement was between €15 and €20 per transaction, making aggregate excess costs of post-trading for investors of between €2 billion and €5 billion.

It also estimated the total spending of investors on trading and post-trading at €28 billion a year in Europe, so the elimination of €2 billion to €5 billion of excess costs would cut investors' transaction costs by between 7% and 18%, adding between 0.2% and 0.6% to the level of EU GDP in any given year. Furthermore, market consolidation could save a further €700 million.

The Commission has subsequently commissioned Oxera to develop an annual monitoring study of prices, costs, and volumes of trading and post-trading services. The recently published 2011 report found that:

- Indicative analysis of the value chain conducted in 2011 for funds on their holding and transacting costs shows the distribution as 3 basis points (bp) for safekeeping (to custodians), 11.7bp in commissions (to brokers), and 0.3bp for clearing and settlement (to custodians). This translates as 71% for the broker; 4.5% for the trading platforms; 1% for the CCP; 22% from the custodians and 1.5% for the CSD.
- The prices and costs of using infrastructures have come down between 2009 and 2011.
- However, average trade sizes have fallen too with the effect of increasing the number of transactions needed to complete the trade.
- The costs of using intermediaries have fallen too.
- Investors' portfolios are concentrated in their domestic markets, however, the way in which transactions in securities across borders are traded, cleared, and settled suggests that markets are becoming more integrated.
- The study suggests that while the costs of doing a cross-border transaction has fallen, they have not fallen as fast as domestically and are therefore still proportionately more expensive. This is most notable in the context of the costs for brokers wishing to clear and settle cross-border. It is up to 4 times more expensive than domestically.

Overall, these studies repeatedly confirm the cross-border post-trading costs of fragmentation and inefficiencies to the EU. While the latest studies show that these cross-

border costs have fallen, reflecting the ongoing efforts to address the Barriers, there is still much work left to be done to deliver an efficient pan-European clearing and settlement system for the EU.

The Code of Conduct for Clearing and Settlement

Although the Commission's 2004 "Way Forward" communication envisaged a framework clearing and settlement directive, this approach was replaced in favour of an industry-led Code of Conduct by Commissioner McCreevy in 2006.

Initially intended to cover cash equities, the scope of the Code covered the provision of:

- Clearing and central counterparty clearing services by clearing houses, CCPs, and potentially also CSDs.
- Settlement and custody services by parties offering issuer CSD services.
- Some elements also applied to trading activities.

It was signed up to by members of FESE, EACH, and ECSDA. The Code itself was made up of three elements to be introduced in stages:

- Price transparency in post-trade services by the end of 2006. Companies would make public the prices, specific content and conditions of each service offered and fully disclose rebate and reduction schemes to eliminate price discrimination.
- Effective rights of access of a fair, transparent, and non-discriminatory basis to service providers along the value chain; from exchanges to CCPs; from CCPs to CCPs; from CCPs to CSDs; and from CSDs to CSDs by the end of June 2007. The Code would also set conditions for interoperability, where providers would enter more advanced relationships with the aim of producing customised services for users.
- Separate accounting for the providers' main activities and unbundling of their services by 1 January 2008.

The Commission set up a monitoring group called MOG to oversee the progress of the Code. This group had its last meeting in 2009.

CCBM2

The Eurosystem's new initiative called the Collateral Central Bank Management Model (CCBM2) will significantly contribute to the harmonisation and efficiencies of Europe's Back Office operations.

The current system, CCBM, referred to the 'correspondent central banking model', was created as an internal system for the central banks up to the time that the private sector would have introduced its own solution. CCBM relied on bonds to be repatriated to the country of issuance each time they are needed to be mobilised. Due to different local rules and services, the costs to the users remained high and while it did not bring the full benefits that it had been expected to bring to the use of collateral in the euro area on a similar basis the use of cash, it was still widely used by counterparties.

CCBM2 aims to make the whole process of mobilising securities to obtain credit at any central bank in the Eurosystem much more fluid and in real time. The abolishment of the repatriation rule as well as the introduction of triparty services that are already widely used in bilateral collateralisation transactions in the wholesale markets will make access to and movement of collateral more flexible.

Target2

The launch of the euro currency in 2000 created an urgent need to build a Euro Real Time Gross Settlement (RTGS) system. The short timeframe forced the choice of keeping the 25 existing national systems while interconnecting them using a Eurosystem platform that was called Target.

Although it was built in time, the "quick and dirty" nature of this infrastructure had two key drawbacks:

- The technical failure of one component (a local RTGS or the "interlink") could have generated a disruption for a number of users even if they were not members of the filing RTGS with potentially systemic effects,
- As Target's architecture was decentralized and heterogeneous, it did not allow multinational users to optimize their organisations.

This led the Eurosystem's central and commercial banks to work together on a new "Single Shared Platform" called Target2 in order to meet their common business and technical needs and allow a harmonised High Value Payments systems and Euro liquidity management.

The resulting Target2 system is open to 700 European direct participants and gives access to more than 4,000 worldwide banks. This is because Target2 is based on the widely accepted and internationally used SWIFT FIN and XML standards, which allows Target2 to be fully interoperable with other systems and functions.

Even though the relations between the commercial and the central banks remain local, Target2 benefits from a well harmonised contractual framework and a unique set of specifications and rules which makes its uses simple and easy.

T2 is a core component for Euro clearing and settlement secured consolidation and delivers payments facilities to the banking industry as a real time consolidated overview of Euro flows and liquidity.

Target2 Securities (T2S)

In parallel to the Commission's work, the ECB announced plans in 2006 to create a single technical platform, which could settle virtually all securities transactions in Europe. The platform, which will be operated by the Eurosystem, will provide commoditised and harmonised Delivery versus Payment (DvP) settlement services in central bank money in euros as well as other European currencies.

T2S will address many of the existing barriers to cross-border securities processing in Europe and it will create a *de facto* domestic market for the settlement of European securities thanks to a single platform and harmonised services and prices for all participating CSDs.

The impact of T2S on harmonisation will be both direct and indirect. Direct, because the development of the platform itself will force harmonisation to take place in those areas related to the core settlement process, and indirect, because T2S can be expected to trigger a "virtuous cycle" whereby the harmonisation of core processes will create both pressure and incentives to harmonise further aspects such as safekeeping and custody.

In terms of its direct impact, T2S will bring about harmonisation by replacing current

divergent national practices with a single solution. A common settlement platform for European CSDs has the advantage that it involves going from standards agreed on paper to the definition of common processes which will become market practice.

Building T2S will require decisions to be taken on the existing options to harmonise securities settlement, such as the adoption of a common interface, common message formats, a common set of rules for intra-day settlement finality and a harmonised daily timetable and calendar. In the process, T2S will therefore contribute to removing Giovannini barriers 1, 2, 3, 4, 5 and 7.

T2S will not only drive harmonisation in many crucial areas, it will also act as a catalyst for even further harmonisation. In early 2011, a Harmonisation Steering Group (HSG), composed of senior level representatives from the industry and public sector, including the EU Commission, was established in order to support the T2S Advisory Group in formulating and monitoring the T2S harmonisation agenda.

The HSG does not aim to redo the work of other harmonisation forums, but rather to ensure that what T2S needs in terms of harmonisation is achieved on time for the launch of the single platform. The Group's *modus operandi* is to be "modest" and "tough": modest in terms of being realistic and not duplicating initiatives undertaken elsewhere, and in focusing on the removal of barriers that are crucial for the T2S launch; tough in terms of adopting a clear and transparent traffic light approach.

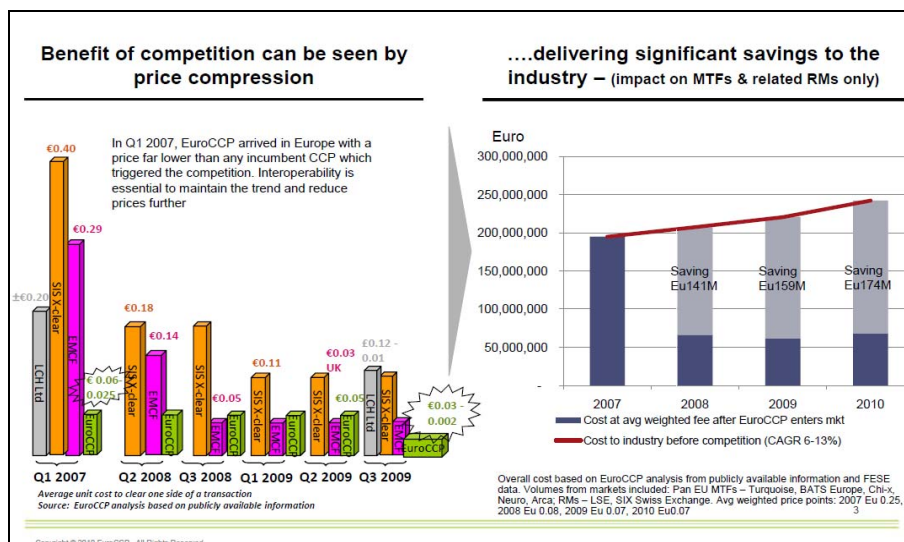
This will enable the Group to highlight very clearly when progress is achieved or when there is a delay in each T2S harmonisation activity. It will enable the T2S Advisory Group to send clear messages to national markets and relevant actors and to exert peer pressure. The HSG will thus be at the core of the T2S harmonisation agenda, giving a boost to T2S and the wider post-trade harmonisation work in Europe in cooperation with the EU Commission and other relevant actors.

The impact of MiFID

2007 saw the implementation of the Markets in Financial Instruments Directive (MiFID) across the EU. By removing the concentration rules at national exchanges, MiFID had a revolutionary effect in the equities arena. Incumbent exchanges found themselves challenged by new entrants called Multilateral Trading Facilities (MTFs).

MTFs enabled competition at the clearing level by employing new entrant CCPs. These new CCPs had pan-European coverage, and were also able to price more competitively and be more innovative than the incumbent CCPs.

The combined pricing power of the new MTFs and CCPs was so effective that incumbent exchanges and CCPs lost considerable market share and had to review their pricing models as well as their technology. The lowering of exchange and clearing costs has benefited market participants significantly.



There has been a desire to introduce interoperability between CCPs in order to have a non-monopolistic clearing space. This had been delayed due to the safety fears from regulators that interoperability may introduce the risk of contagion between CCPs.

UK and Swiss regulators have now approved the arrangements between LCH.Clearnet, x-clear, and EuroCCP if one CCP fails. This could act as the basis for more interoperable links between exchanges and clearing houses in these jurisdictions.

Falling fees have challenged the profitability of the business models of exchanges and CCPs, however, there has been some compensation as the number of transactions has gone up considerably since MiFID was introduced because trade sizes have reduced as high frequency trading has increased.

There is ongoing debate about a vertical or horizontal clearing solution. Both solutions have their advantages and disadvantages. A mixture of these solutions may be envisaged by ensuring that both models can communicate with each other via an interoperable link.

Reaction to the Crisis

Efforts to reform the EU's financial infrastructure had been focused mainly on addressing the inefficiencies and fragmentation of the markets. The Financial Crisis led to a re-appraisal of this and a renewed international focus on the safety and robustness of the market infrastructure.

In order to address the systemic risks identified by the likes of the Lehman insolvency or the failure of AIG, the G20 agreed in September 2009 in Pittsburgh that, *"All standardised OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements."*

The Commission will meet these commitments through its EMIR proposal and the MiFID Review. As well as strengthening the EU's infrastructure at the clearing level, the Commission will also address the robustness of the EU's settlement infrastructure through its planned CSD legislation.

EMIR, the CSD legislation, and the MiFID Review are the building blocks of the new system. The planned Securities Law Directive proposes to harmonise the legal framework for securities holding and transactions and will provide the cross-border legal certainty to bind these blocks together.

The last decade has seen an unprecedented focus on the importance of the EU's post-trading infrastructure to Europe's economy for both growth and safety. The resources and effort invested by industry and regulators in resolving the challenges that have been identified has yielded progress. However, evolving understanding of existing issues and new challenges developing from these responses means that further work will be required before Europe has the clearing and settlement infrastructure it needs.

Chapter 2: Current state of markets and key challenges

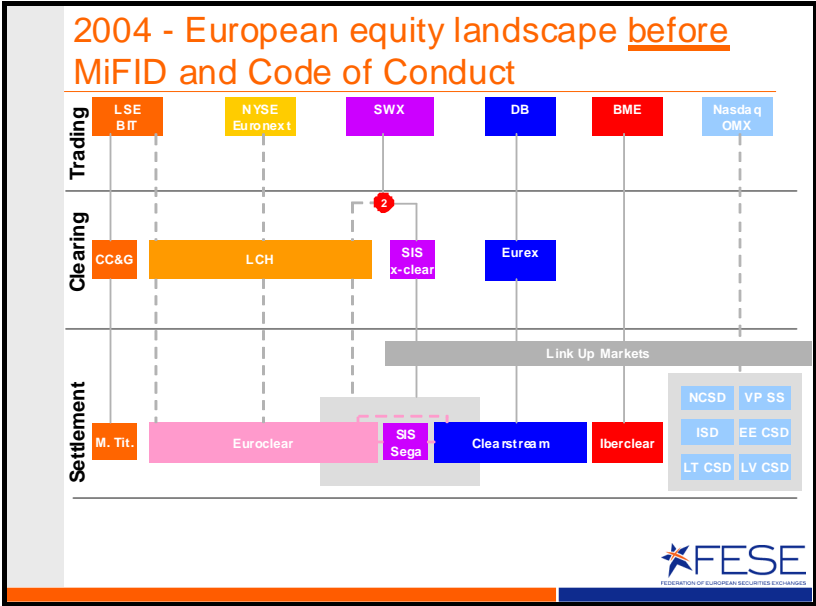
This chapter highlights the current state of markets and presents key challenges. The approach that has been followed distinguishes between the main asset classes (equities, fixed income, derivatives). While each of these asset classes is characterised by a different infrastructural set-up, it should be noted that a number of issues (e.g. standardisation of data exchange, competition, legal certainty) are not limited to a single asset class.

Equities

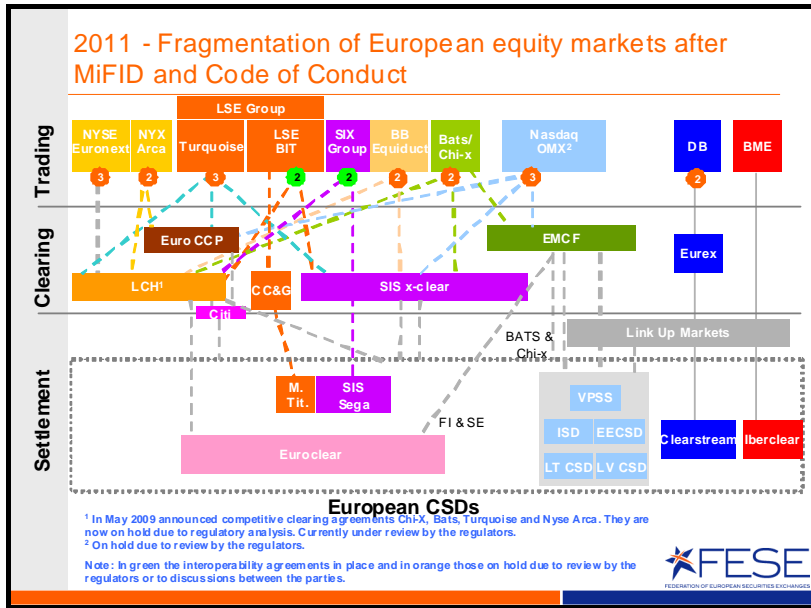
Size of European Market = €11.29 billion in terms of average monthly turnover in 2009¹¹

Structural developments

The following chart gives a high level overview of how some of the large market infrastructures in cash equities have evolved in Europe pre- and post-MiFID and the Code of Conduct.



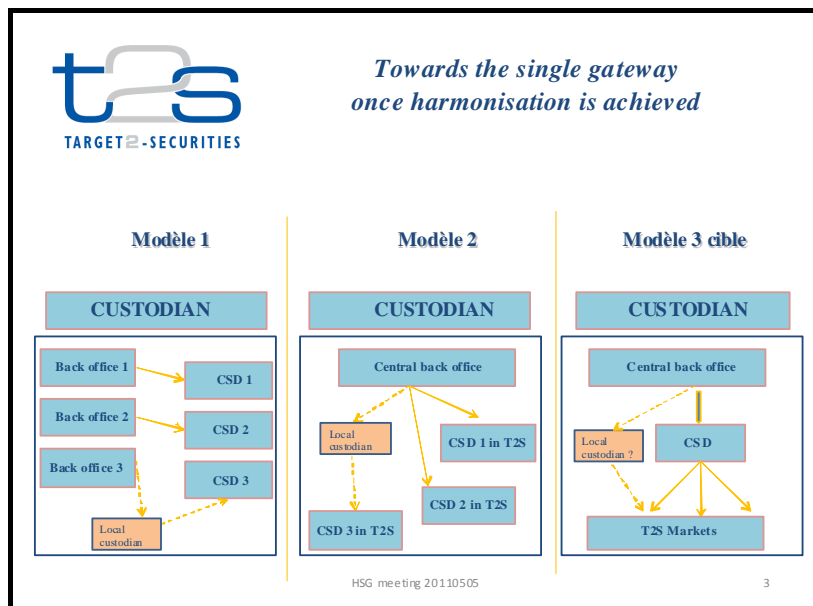
¹¹ Figures supplied from FESE, taken from Thomson Reuters Equity Share Reporter.



The charts show several developments:

- Market structures have changed particularly on the level of trading
- There have been attempts to build interoperable links between CCPs

The launch of T2S is expected to influence the state of the market. The more harmonisation will be achieved regarding post-trading processes, the deeper will be the impact of T2S on market structure. Possible scenarios could look as follows:



Competition issues

EU Competition Landscape by Asset Class - Cash Markets				
	Equities	Fixed Income & Rates	FX	Commodities Exch & Credit der
Trading	Increasingly competitive environment including Regulated Markets & MTFs following the introduction of MiFID in 2007.	Limited competition between platforms and interbank / brokers.	Global market. Competitive trading platforms and inter-bank market.	Competing platforms and broker-led platforms.
Clearing	Limited 'concurrent' competition between CCPs for provision of clearing services to trading platforms. End user choice (i.e. clearing member) is severely limited to due to non-interoperable arrangements between CCPs.	Limited competition between CCP providers.	Variety of post-trade providers including CLS	CCP providers.
Settlement & Custody	De facto monopolies for domestic settlement in central bank monies. However, competitive environment for settlement services in CoBM and Custody Services.	Limited user choice and competition between incumbent providers.	Commercial bank & CLS.	

At the **trading level**, as far as cash equity markets are concerned, MiFID provided for a competitive landscape by abolishing concentration rules and by allowing MTFs and other trading venues to compete with traditional securities exchanges offering market participants choice in most markets. However, obstacles in the post-trade space may have an adverse effect on competition and user choice at trading level.

At the **clearing level**, and again as far as cash equity markets are concerned, the introduction of competition and user choice has so far been largely unsuccessful due to commercial and regulatory barriers. In the cash equities markets, EMIR is expected to have an effect at clearing level comparable to the pro-competition/user choice impact that MiFID has had at trading level, provided that the interoperability part of EMIR reflects the Commission's original proposal, and all conditions aiming at risk mitigation are addressed.

At the **settlement level**, whilst there is a choice for market participants in regards to securities settlement in commercial money (agent banks, ICSDs), settlement in central bank money still is largely performed by national CSDs enjoying a *de facto* monopoly status.

This situation, characterised by absence of competition and choice, is likely to continue in an accentuated manner in a post-T2S environment, should the conditions to smooth cross-CSD settlement not be met. The *de facto* monopoly status of CSDs includes Barrier 9, i.e. the monopoly of CSDs acting as Issuer CSDs for issuers in their respective markets.

Except for functionalities tied to the role of issuer CSD, market participants can choose from a wide spectrum of providers of settlement & custody services with different business models.

Key challenges

- European equity markets are in the midst of fierce competition, and the trend to fragmentation is about to be taken over by consolidation. This consolidation is much needed and to be encouraged from an exchange and MTF perspective. But the need for a competitive post-trade environment still exists as this helps to determine the competition at exchange and platform level.

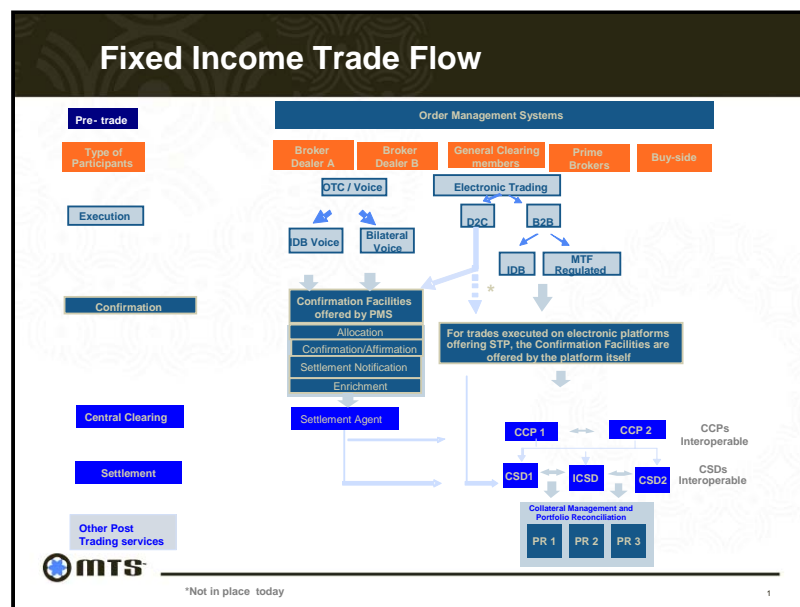
- Removal of regulatory discrepancies between Member States that currently exist, which have been one of the main obstacles to the implementation of interoperable links between CCPs. Work is under way both at the EU and the global level to address this.
- Exchange and MTF competition may only be possible once CCPs are linked on a level playing field risk and margin basis by all regulators
- Exchange and MTF links may need to be opened up for CCPs to build interoperable links
- The ultimate aim of the Code of Conduct ("*offer market participants the freedom to choose their preferred provider of services separately at each layer of the transaction chain and make the concept of cross border redundant!*") has not yet been fully achieved.
- There is a pan EU-market for equities evolving. At the same time, this market seems to be limited to "large cap" equities, with "small caps" remaining largely on a national level.
- There is a competitive environment for trading of cash equities that has led to innovation in product offerings and trading technology. At the same time, there may be structural impediments to the industry seeing any such innovations in risk management or netting and scale efficiencies being achieved in equities clearing.
- While domestic systems function well, the processing of cross-border business is more cumbersome. Cross-border holdings are more expensive, riskier in terms of legal certainty (who owns what) and additional counterparty risks.

Fixed income markets

Size of European Market = €28,000 billion¹²

Structural developments

The chart below gives a simplified overview of a fixed income trade flow.



The European fixed income markets are comprised of two sectors, each with a domestic and an international aspect: the government bond market and the corporate bond market.

¹² Figures supplied by the European Repo Council.

The domestic markets are supported by domestic infrastructure, (CSDs), which is in the process of adapting to the Eurozone; T2S is a key development here.

The international markets based in Europe have long been served by the ICSDs, with increasingly efficient links between them. Much government bond trading and most corporate bond trading takes place on a bilateral basis, rather than on multilateral electronic platforms, as does government bond repo business (mainly in short term dates).

In contrast to equities, there is choice at each level of the trading and settlement infrastructure and progress has been made on interoperability. Automated trading is becoming more widespread.

The fixed income markets are not independent of other markets; developments in derivatives will influence the shape of the fixed income markets and the infrastructure that serves them. Participants in the market include banks, insurance companies and pension funds, as well as a range of investment managers managing money for a wide variety of funds.

In addition to the market for debt securities, fixed income includes an important market for secured financing, referred to as the 'repo' (for repurchase) market. Securities are sold subject to an agreement to repurchase them, providing the seller with temporary cash liquidity; the difference between the sale and purchase prices represents a rate of return to the lender. Participants in this market make very specific demands of the market infrastructure which are increasingly being met, but more remains to be done.

Efficiency and operational issues

Fixed income securities, principally, but not only, government bonds, are widely used in the financial system to provide security against the failure by a market participant to perform its obligations ('collateral'). Members of clearing houses (or CCPs) post collateral to the clearing house; banks post collateral to each other in the interbank market; and there are other examples.

Collateral needs to move promptly without risk between participants; large sums of money and tight deadlines are involved. The European market infrastructure, with its mixture of domestic and international systems, is not well adapted to this task. Private sector initiatives, such as tri-party repo, have mitigated some difficulties; but considerable legal and operational problems remain.

Day-to-day bond settlement is supported by CSDs in national markets. In international markets, in addition, the ICSDs provide a settlement service in domestic bonds for their clients. The chief role of the ICSDs is twofold: first, to settle transactions in the securities for which they act as a CSD (international bonds); and secondly, in providing settlement across systems/borders in various currencies (principally Euro, US Dollar and Sterling).

The 'Bridge' between the ICSDs permits interoperability between various users in different settlement locations. While this has helped straightforward transactions to settle in a relatively efficient manner, the market for collateral does not yet have a robust and efficient pan-European infrastructure.

The ability to transfer collateral cross-border/cross-system needs to be brought up to the same level of efficiency as the transfer of collateral within the same settlement system in order to support an efficient European capital market.

A wide range of market participants are affected by the shortcomings of the repo market infrastructure, including investors who make bonds available for repo trades, investors who finance their bond operations in part with borrowed money and the banks and other intermediaries that facilitate this business.

The necessary reforms will also have the wider benefit of providing an efficient settlement platform for less demanding users of the market, who are not involved in repo business. Further efficiency gains could arise from continuing to modernise and improve (i) links between CSDs and ICSDs and (ii) the 'bridge' link between the ICSDs.

The case for urgent action is reinforced by the wider regulatory reform programme. Initiatives to make banks safer and more liquid, and to encourage banks to lend to other financial institutions on a secured rather than an unsecured basis, for example the reforms of Basle 3/CRD IV for liquidity buffers, demands high quality collateral to support a wide range of financing operations.

Although market initiatives have already reduced risk and increased efficiency through the introduction of electronic trading platforms linked to CCPs, further work is required by both public and private sectors to make sure liquidity is not then split between different locations.

Given the increasing role of secured financing for payment or collateralisation of all financial market activities, the repo business is often time-critical. While an increasing proportion of repo business is centrally cleared or cleared on a tri-party basis, bilateral settlement remains important, particularly between intermediaries and end investors.

EMIR will require CCPs to only accept high quality collateral. However, with strong demand for finite high quality collateral, there will be pressure on other market participants to accept collateral of less quality. This will require advances to be made in centralised clearing of non-government bond collateral. The removal of the obligation to 'repatriate' bonds when pledging them to the ECB will assist this, as both "official initiatives" will provide a European settlement infrastructure no longer fragmented along national lines. However, much work remains to be done as the total breakdown of unsecured lending for wholesale market funding between banks has not yet hit the buy-side.

The European Repo Council, an industry body under the auspices of the International Capital Market Association, recently set out a road map of improvements in a White Paper that has been updated as domestic market infrastructures are increasingly aware of the need to open up to European wide solutions.¹³

Key challenges

In summary, the problems identified and worked on over recent years have been exacerbated by the increasing volume and pace of business. The key issue therefore is to bring forward reforms which:

- Ensure efficient cross-border links, sweeping away outdated practices (e.g. telephone pre-matching of settlement instructions);
- Fix the point of finality of settlement in a cross-border context;

¹³ <http://www.icmagroup.org/getdoc/7b46e5b8-3a03-4136-b08f-33aa9a3d4177/European-repo-market-white-paper.aspx>

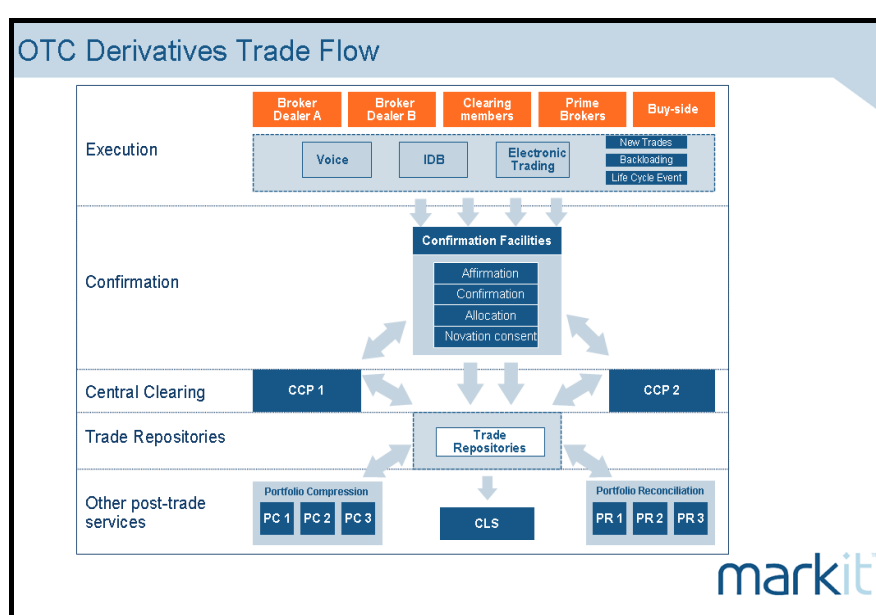
- Eliminate wasteful multiple transfers of collateral (e.g. removal of obligation to 'repatriate' bonds to the country of origin in order to use them as collateral as envisaged with CCBM2); and
- Recognise the importance of the use of commercial bank money on an equal basis as central bank money. A study highlighting the need for seamless interaction between both was released by the ERC on 14th September 2011. Given the complexity of the interactions, care needs to be taken that there are no unintended consequences.

Derivatives markets

Size of European Markets = €222,488 billion notional outstanding¹⁴

Structural developments

The chart below gives a simplified overview of an OTC trade flow.



The trading and post-trade infrastructure for OTC derivatives in Europe is going through a period of rapid change. EMIR and equivalent US regulations will further accelerate these changes and mandate a more robust post-trade environment in particular over the next couple of years. Whilst there is still political debate on some issues there is strong consensus on most key elements of the future state.

Historically the OTC market was characterised by bilateral relationships between parties with paper documentation and cash and collateral moving directly between the participants. There was as a result, little infrastructure and this has led to concerns over transparency and systemic safety in the market.

One of the reasons infrastructure has been different for OTC derivatives is that structurally the market is different from the cash and listed derivatives markets, even the OTC ones:

- Average trade sizes are significantly higher, e.g. \$100m + for interest rates derivatives and even in the credit market single names trades are typically \$3-5m
- Transaction volumes are low (but notional turnover can be high given trade size)

¹⁴ Based on figures from the Bank of International Settlement for H2 2010.

- Relatively few active participants, e.g. less than a 1,000 institutions trade credit derivatives regularly globally compared to many tens of 1000s in other markets
- Liquidity (and therefore post-trade volume) split over many thousands of types of trade rather than commoditised contracts
- High complexity of some transaction characteristics and underlying legal basis
- Different products have very different infrastructures e.g. Commodities, FX and Interest rates all use different players

The key elements in the infrastructure are:

Execution platforms

Whilst the OTC markets have traditionally been voice based, either with direct transaction between participants or voice brokers intermediating trades there has been a trend towards increased use of electronic platforms. Platforms operate both in the interdealer and dealer to client markets for more liquid products.

Post-trade Middleware

In order to electrify the market place and increase efficiency two types of middleware have developed in the OTC market (although in some markets, e.g. rates, the same technology serves both purposes).

- Electronic ticket delivery networks which carry an electronic message from a trading platform to a participant to allow the participant to 'auto-book' the trade without re-keying once it has been executed. These tools increase efficiency and reduce risk by avoiding re-keying errors. Some of the networks are proprietary to a platform and others act across platforms e.g. FX market
- Electronic confirmation tools which replace paper documents with legally enforceable electronic records. These tools connect both parties to the trade (and in some cases the execution platform where functionality is being bundled with ticket delivery) and allow the parties to agree all the legal terms of a transaction (by affirmation or matching) and then attach a legal framework so that the record is legally enforceable. A full set of terms is covered by a combination of parties submitting data, the confirmation platform enriching trades using rules or standing data or by reference to legal documentation (e.g. ISDA Master agreements)

The level of electrification varies by asset class and participant type with high rates in Credit derivatives (98%+) for example and lower rates in equity derivatives (45%+).

Additional post-trade processes are often automated using these networks e.g. delivery and fund allocations and obtaining consent for trade novations.

Portfolio compression services eliminate risk and reduce operational and capital costs. Trade termination, as compression is also known, exists for single name and index CDS swaps worldwide, interest rates swaps in a great number of currencies and a range of energy derivatives. There are two methodologies: one reduces the total outstanding transactions by tearing up existing positions and replacing them by a much reduced number of new transactions without changing the underlying position of the participants in each compression exercise. The other does not result in any new transactions, but simply eliminates trades which are not essential for the composition of the market risk profile. Both methodologies serve to reduce the gross market risk position without altering the net market risk position. Portfolio compression is used both in a bilateral and a centralised clearing environment.

Regulators have actively encouraged adoption of electronic confirmations over the last 5-6 years and new regulations will ensure that trades are electronified wherever technically possible. This is a key enabler for Trade Repositories (which need electronic records in consistent formats) or for central clearing (which need a feed of matched electronic trades or electronic messages that the CCP can match itself).

Central Counterparties

As with other financial markets, CCPs have a key role to play in managing counterparty exposures in OTC derivative markets. Parties novate a bilateral trade to a CCP so that each faces the CCP rather than the original counterparty. In order to manage its risk the CCP requires each of the parties to post collateral to protect it from the risk of their default. This structure proved highly effective in the case of Lehman's default where their OTC Interest rate swap exposures were intermediated via a CCP.

Currently CCPs operate for a large part of the interbank rates and credit exposures and proportion of the commodities market. Some exchange lookalike OTC contracts are also cleared in the equity derivative market. Although services are offered to buy-side firms there is minimal usage currently.

EMIR will mandate the use of CCPs for most OTC trades and this will significantly increase usage particularly by non-dealers.

Trade Repositories

In order to foster increased understanding of the OTC markets and to allow effective management of systemic risk and market monitoring Trade Repositories are being created which hold records of the complete population of OTC trades.

These are organised by asset class and give regulators the ability to query data and understand exposures in the market. These repositories now exist for credit, interest rate and equity products. EMIR will mandate the reporting of transactions to these repositories by most market participants and ensure the quality and completeness of the data they contain.

In the OTC Credit Derivative market there is also a Trade Information Warehouse which in addition to supporting regulatory access to data also supports several operational processes. The cash settlement of quarterly premium payments is automated. Certain lifecycle events for CDS contracts – e.g. successor events or restructuring events are supported using data and processes on this Warehouse.

Competition issues

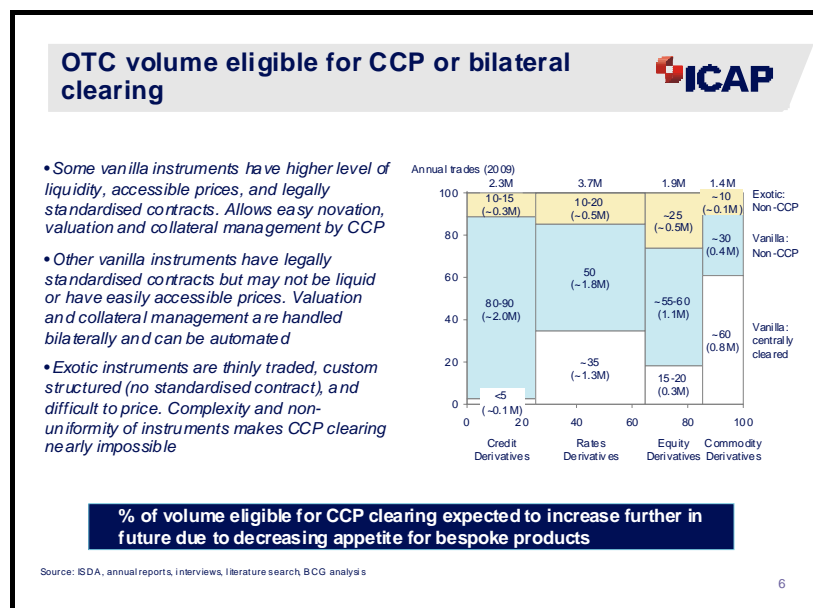
A clear distinction has to be made in on and off exchange traded derivatives. Both can be cleared through the same CCP these days, which has advantages as netting lowers costs for risk purposes. It should be recognized that due to a lack of competition between CCPs, there is little interest for a CCP to accept a transaction from a known customer at another exchange or platform done through a different CCP.

In all asset classes many market participants and observers see a lack of competition at clearing level which influences the trading and the market liquidity.

EU Competition Landscape by Asset Class - Derivatives Markets				
	Equities	Fixed Income & Rates	FX	Commodities Exch & Credit der
Trading	Multiple exchanges offering trading in index and single stock derivatives. Although some recent moves towards direct competition at a product level - licensing and clearing structures have restricted this growth.	Relatively limited direct competition at exchange level for trading, currently operating as an effective duopoly. Competitive environment between banks & brokers for OTC markets.	Global market. Competitive trading platforms and inter-bank market.	Multiple competing exchange and platforms for listed derivatives and OTC products.
Clearing	No direct competition at exchange - product level for listed derivatives clearing services. Competing (often global) service offerings for OTC markets.	No direct competition for at exchange - product level for listed derivatives clearing services. Competing (often global) service offerings for OTC markets.	No direct competition for at exchange - product level for listed derivatives clearing services. Competing (often global) service offerings for OTC markets & currently not mandatory. Dominated by US exchanges.	No direct competition for at exchange - product level for listed derivatives clearing services. Competing (often global) service offerings for OTC markets.
Record Keeping / Custody	Nascent trade repository initiatives for OTC derivatives. Competition unhelpful in development of this market at this point of development.	Nascent trade repository initiatives for OTC derivatives. Competition unhelpful in development of this market at this point of development.	Nascent trade repository initiatives for OTC derivatives. Competition unhelpful in development of this market at this point of development.	Nascent trade repository initiatives for OTC derivatives. Competition unhelpful in development of this market at this point of development.

Key challenges

- A strong market trend is the shift of OTC products onto exchanges, electronic trading systems, or MTFs and/or central clearing. The chart below¹⁵ illustrates how much volume of OTC derivatives products may shift versus CCP clearing in the near future.



- CCPs will represent significant concentrations of risk in the new market landscape and hence ensuring they are appropriately supervised and risk managed and operate on the basis of a robust legal framework is the key to the safety of the European market.
- Harmonised risk modelling to be proposed by EU regulators.
- Competition in clearing should extend to exchange traded derivatives products. This is because many market participants question the competitive nature of vertical silos.

¹⁵ There are alternative sources on the clearing eligibility of OTC products, e.g. IMF (between 75-80 %), <http://www.imf.org/external/pubs/ft/scr/2010/cr10252.pdf>, JP Morgan (63 %), <http://www.bnymellon.com/foresight/pdf/derivatives.pdf>, Citi (60 %), http://www.transactionservices.citigroup.com/transactionservices/home/securities_svcs/fund/docs/otc_white_paper.pdf

- At **trading level** choice of listed derivatives provider for market participants is often limited; moreover, the choice of interoperable CCPs is non-existent in this space.
- At **CCP level** the derivatives markets appear to be marked by significantly lower levels of competition due to prevalence of the vertical silo model. The development of further competition in this space is moreover threatened by potential consolidation as a result of merger activity.
- In the short to medium term, harmonisation initiatives in the areas of netting and company law could be useful.
- TRs are important to ensure market transparency - however, it is important to ensure fair and open access to relevant data. A CPSS-IOSCO working group is addressing this.

Chapter 3: General Obstacles to Progress and Integration

Work on the Giovannini Barriers

The overall progress in dismantling the Giovannini Barriers has been mixed. While progress was made in certain areas, European capital markets have not advanced to the position originally envisaged in the Giovannini reports: that by bringing down barriers, post-trading infrastructure for EU capital markets could naturally take shape and make the idea of a single European market for post-trading services a reality.

Key reasons for the lack of overall progress were described by Alberto Giovannini in 2008.¹⁶

"[T]he political economy of the reform of EU financial market infrastructure has the following characteristics:

- *like monetary reform, it is an arcane subject with little genuine political appeal;*
- *like other forms of international liberalizations, the gainers are dispersed and largely unaware of what is going on, let alone the potential gains of the reform;*
- *the industry of financial markets infrastructure is not all against reform, but many actors feel threatened by it (many protected markets would disappear);*
- *the intensely technical nature of the reform hinders the power of initiative of authorities;*
- *the consultations process allows de-facto over-representation of post-trading industry interests.*

These conditions would lead to predictions that broadly match the actual outcome so far: reform has been very slow; all fundamental aspects of reform, that is the legal and regulatory framework that would allow true consolidation and integration of post-trading service providers, are still to start in a significant way. In other words, since the interest groups with relatively more effective influence on policymaking are ambivalent about the gains from liberalization (some certain market advantages would be lost), since policymakers are not under pressure to move forward, and may well be concerned about undesired and unforeseen effects of reform, progress has been very slow."

Code of Conduct

Comparing prices between service providers has become easier, but remains challenging in view of underlying differences in business models. While competition has increased, there are obstacles to market entry and cross-border provision of services. While services have been unbundled and accounts separated and audited, the information mechanism has not been satisfactory.

The ultimate aim of the Code of Conduct was to offer to market participants the freedom to choose their preferred provider of services separately at each layer of the transaction chain (trading, clearing and settlement) and to make the concept of "cross-border" redundant for transactions between EU Member States. European capital markets still fall short of this goal.

General remarks on obstacles to progress

Any publicly sponsored initiative in the field of market infrastructures faces a co-ordination challenge. Changing market infrastructures is a complex project, as many actors have to go into the same direction within a certain time frame. Momentum of any initiative is critical: once a process loses momentum, it is close to impossible to reset the exercise.

¹⁶ Alberto Giovannini, *Why the European Securities Market is not fully integrated*, published in "Europe and the Euro," edited by Alberto Alesina, Francesco Giavazzi, 2010, University of Chicago Press

Chapter 4: Three Scenarios with Policy Choices for Progress

This chapter outlines three scenarios that propose potential policy actions in the field of market infrastructures. Each scenario makes different assumptions on future regulatory and market development. Given the need to provide clear choices from a multitude of complex factors and options, each scenario is progressively less consensus-based.

Scenario 1 takes the work on the Giovannini Barriers as its starting point and positions itself in the current regulatory and market context, describing actions that should be taken by market players and regulators in order to make progress. It does not propose structural changes to the infrastructural set-up of the industry, but assumes that current actors (both on the regulatory and market side) should develop common best practices with a view to improve cross-border activity (i.e. an incremental approach).

Scenario 2 develops this incremental approach and describes further actions which may be taken up in order to improve cross-border activity, even though these actions may not have been tested in the market yet. Scenario 2 goes further than scenario 1 in addressing structural issues.

Scenario 3 approaches the issue from a holistic angle and attempts to define how a post-trade environment could be ideally designed.

Scenario 1: Re-booting Giovannini

Introduction

Chapter 1 to 3 of this report highlight past EU focus and efforts for integration, the current market situation and key shortcomings as well as obstacles to progress and integration, thus describing in greater detail the unfinished work of integrating post-trading in Europe.

Against this background we take the view that the Action Plan in section 4 of this scenario needs to be accomplished whatever the policy choice for more ambitious or visionary steps may be. In essence: the accomplishment of this Action Plan is the basis and condition precedent for more far-reaching plans.

Objective

To create a single, integrated, low risk and low cost post-trading environment in Europe as an integral part of the European single market vision, that will

- improve the safety, efficiency and liquidity of European capital markets
- benefit all users, i.e. issuers, market infrastructures, banks and investors
- remove a highly fragmented market structure
- lower barriers to entry and improve competitive conditions in Europe's capital markets
- provide for global competitiveness by eliminating estimated aggregate excess cost of €2 to 5 billion per annum.

Problem

The process of eliminating the well defined Giovannini Barriers and implementing the European Code of Conduct for Clearing and Settlement that has aimed at delivering efficient and integrated clearing and settlement arrangements for the EU has largely remained unfinished work. In this context it is essential to recognise that bespoke detailed solutions may be required for the different asset classes

Solution

- **The ECOFIN Council** should be invited to express support of the Action Plan below, involving national governments from the outset to the extent required;
- **Targeted action** is required of both the private and the public sector to dismantle the remaining obstacles and barriers as well as to fully implement the Code of Conduct;
- **Targeted cooperation** between public authorities – in particular the European Commission and the European Central Bank – and the private sector should be continued and revitalised with a view to combine authority and expertise and experience toward a common objective;
- Harmonisation in the context of **Target2-Securities (T2S)** and initiatives derived from the Action Plan below need to be consistent;
- A **comprehensive monitoring mechanism** is necessary, e.g. by setting up a monitoring group, composed of senior representatives of the Commission/ECB/ESMA and industry experts, that is able and willing to exert targeted influence, where required.

Action Plan with a 3 to 4 year time horizon

This **Action Plan** describes relatively high level objectives. Detailed project plans including milestones on the timeline will therefore have to be set up by the responsible parties; the monitoring will be executed against such project plans.

The **Completion Dates** have been proposed in line with previously planned/agreed dates (1), alignment with T2S time plan (2) and operational/risk management considerations (3). From within the **responsible parties** a leader/chair will have to be designated who will also report to the monitoring body.

Action	Deadline	Responsibility
Communication		
Electronic, formatted and standardized communication throughout the entire value chain implemented based on ISO 15022 / 20022	2014 (1)	Private sector: market infrastructure, intermediaries
Clearing		
Availability of interoperable CCP services in all markets for adequately liquid cash securities, enabled by non-discriminatory access to trading venues and CSDs	2012 (1, 3)	EACH, European Commission (EMIR)
Availability of CCP clearing to buy side for purposes of risk reduction and efficiency (netting)	2013 (3)	EACH, IMA, et al.
Transparent operational CCP process including timing of novation, irrevocability, acceptance of trades by direct clearing members, risk algorithm and associated margin requirements	2012 (3)	EACH
Non-discriminatory availability of trade data to counterparties of trade and CCPs and CSDs immediately after execution of trade	2012 (1, 3)	European Commission (MiFID II, EMIR)
Settlement and related pre-settlement processes		
Harmonisation of settlement processes including	2013 (2,	T2S, ECSDA, EFAMA/IMA,

pre-settlement functionalities (confirmation T+0, allocation T+0/T+1, pre-settlement date matching compliant with ECSDA-ESSF matching standards) that will allow smooth cross-CSD settlement in T2S and beyond	3)	AFME, ECSAs, public sector at national level where required (e.g. France re hold and release mechanism)
Harmonisation of settlement cycles at T+2	2013 (2)	European Commission (CSD legislation), private sector
Harmonisation of fails management including buy-in regimes	2013 (2)	FESE, ECSDA, AFME, ECSAs
Harmonisation of operational processes for ETFs	2012/13 (3)	Securities industry, FESE
Asset servicing		
Comprehensive implementation of the Market Standards for Corporate Actions Processing	2013 (1, 3)	National / European Market Implementation Groups under the auspices of the industry-led Broad Stakeholder Group, public sector at national level, where required (e.g. UK re dematerialisation / immobilisation, Germany re payment date for cash and securities)
Operationally feasible record dates for cross-border participation in General Meetings	(3)	European Commission (revised Shareholder Rights Directive)
Legal		
Harmonisation of securities laws through Securities Law Reform, compliant with the Geneva Securities Convention, including all recommendations of the Legal Certainty Group	2015 (1)	European Commission, Member States
Close out netting regulation that eliminates legal uncertainties re enforceability of netting agreements and provides for legal certainty also in cases of resolutions	2012 (1)	European Commission
Tax		
Implementation of Simplified Withholding Tax Relief Procedures (Recommendation COM (2009) 7924), using the OECD Implementation Package	2014 (3)	Member States
LEI		
Implementation of a global solution for Legal Entity Identifier (LEI)	2013 (3)	European Commission, GFMA, issuers, investors

Scenario 2: Beyond Giovannini

Objective

The major objectives that are pursued by stakeholders when designing the optimal market infrastructure are efficiency/cost, resilience/safety, competition and innovation

The relative importance of these objectives has changed over time with market and political priorities evolving. While cost and innovation used to be the major drivers, resilience/safety and competition play a much bigger role in European thinking today

On a higher level, post-trade infrastructure should support the international competitiveness of the European financial markets, enabling the management of risk and financing of investments at competitive cost of capital in order to foster growth of the European economy. Financial infrastructures and services are in themselves an important part of the European economy and the provision of such services by European entities on a global basis brings both economic benefits and risk to Europe

Problem

Current legislative initiatives such as European Market Infrastructures Regulation (EMIR), Securities Law Directive (SLD) and Central Securities Depository (CSD) regulation as well as the reinvigoration of the process to eliminate the Giovannini barriers will have a profound impact on the structure of the post trade landscape in Europe. Whilst these changes will inevitably require some subsequent adjustment in future years, there are additional areas where improvements are needed to achieve a more ambitious improvement for market structure.

Post the credit crunch, markets face new challenges and historic regulations or market structures will not always be suitable and hence need a framework within which to evolve. Developing such a framework is challenging, but achievable, given:

- The many, often diverging, objectives of stakeholders and vested interests
- The contents, and the impact, of upcoming EMIR, SLD and CSD regulation is not yet known
- Structures which have been historically successful may no longer be optimal for the requirements in the new world

The efficiency of cash markets is largely best addressed through current in flight initiatives and the Giovannini Barriers work but additional work will be needed due to the increased role of collateral in markets due to:

- Capital increases (pro-cyclical buffers, minimum capital levels)
- Derivatives world – initial margin and default fund contributions
- Resolution (2 days delay in unwind increases demand)
- Changes in practice on rehypothecation of collateral

The industry will face challenges in meeting these requirements and hence steps will need to be taken to increase the velocity and ease of reuse of collateral, particularly across borders. This is both a European and a global challenge but will require changes to the operation of domestic government bond markets, and in particular easier arrangements for cross-border pledging.

The introduction of increased collateralisation and use of CCPs puts significant emphasis of the security of these arrangements under various national insolvency laws. Already differences in national law, real or perceived, are starting to influence where business is located.

Harmonisation of insolvency law, in as far as it impacts CCPs and bi-lateral arrangements, is important to an integrated European market. Also any lack of clarity on how new rules, e.g. on bank resolution, interplay with insolvency law will create significant uncertainty and potential risks within Europe. In order for markets to flourish and for European infrastructures to remain competitive, investors have to be confident in the legal arrangements they will increasingly rely on in the new world.

A similar situation exists in the traded loan market where legal structures to transfer interests in loans and confidentiality arrangements vary significantly. This creates barriers to efficient trading and in particular electronification of the loan market in some European countries, whilst others European nations, like the US already have structures which support electronification.

Finally the market and national governments remain divided on the question of horizontal or vertical structures for financial markets. Protagonists on either side argue either the efficiency of a fully integrated vertical structure or the competition issues that closed structures create.

This uncertainty over eventual structure impacts the long term investment decisions required to make larger changes and the willingness of competitors to enter markets. A framework which gave clarity of direction for markets (in either direction) would allow the market to focus on optimising and developing infrastructures for the new world. Ultimately it is probably not for the Commission to dictate the right structure but to create a regulatory framework that allows open competition to deliver the best result for each market within Europe.

Action Plan with a 3 to 4 year time horizon

Action	Deadline	Responsibility
Insolvency harmonisation study		
Study to look at the need to harmonise and reinforce insolvency law to support financial markets across the EU. In particular the study should look at: <ul style="list-style-type: none"> • Co-ordination between bank resolution and insolvency laws • Legal protections afforded to central counterparties ("CCP") • Protections afforded to investors in respect of positions and client assets held by intermediaries or CCPs • Close-out netting pre- and post-administration • Establishing an effective interest in the collateral used to secure margin liabilities. 	2013	European Commission
Study on development of the European traded loan market		
Study to identify opportunities in lending markets to create a harmonised regime for documenting and trading loans to improve the depth and	2012	Commission, ECB, industry associations, e.g. LMA, ERC

liquidity of the European market. In particular identify barriers to electronifying the market to improve post trade efficiency.		
Study on Government Bond Market Efficiency		
Identify opportunities for the development of post-trade infrastructure for the government bond markets to improve collateral efficiency. The velocity and availability of collateral needs to be substantially improved to support future needs.	2013	Commission, industry associations, Central Banks
Market Structure Study		
Concerns around vertical silo structure are often debated and have a significant impact on the framing of regulations for financial markets within the EU. A detailed study should seek to provide clear guidance within a European context on: <ul style="list-style-type: none"> • Overall do vertical structures reduce competition and inhibit efficiency for financial markets or do the benefits of an integrated model outweigh any issues? • If issues are found then what is the most effective method of addressing these issues for users; are structural changes necessary or can governance measures play a role? 	2014	European Commission

Scenario 3: Frictionless Financial Market Infrastructure

Introduction

Financial market infrastructures serve a vital economic function. Their smooth functioning can help alleviate the impact of financial shocks, as in the 2008 banking crisis, while their failure could result in a bail-out by public authorities. The G20 reforms to the financial system will increase their systemic importance. Consequently there is a strong public interest in their efficient operation and accountability.

This scenario argues that inefficient European legacy models entrench existing barriers and resist change. It sets out a vision for a more transparent, flat and lean post-trading environment that maximises the benefits to end-users and stakeholders: investors, issuers, regulators and the wider public. Due to the inherent incentives to protect the investment in current legacy arrangements, strong regulatory action will be required to drive the coordinated action necessary to make this vision a reality.

Objective

To create a frictionless financial market infrastructure in Europe that will enable investors and issuers to achieve their objectives without unnecessary requirements from the post-trading process affecting their decision-making to the benefit of the wider economy.

Problem

The creation of the single market in the EU for financial services will have significant economic benefits for all the citizens of Europe and will establish a platform that enhances future growth and prosperity. However, failure to adequately address issues in relation to the post-trade architecture may have a negative impact on economic prospects. In considering a five-year view of market infrastructure it is helpful to have regard to the long-term trends in the market.

- The macro trends of capital flows in world markets include the effects of an increasing savings ratio (principally in Asia) creating a greater supply of investment capital together with an increase in the demand for credit products. One of the dominant features of this trend is the increase in mobility internationally of this capital flow process with the consequence that European markets can no longer assume that their share of this capital flow will remain intact.
- Long-term trends combined with the most recent experiences in the markets illustrate an ever-increasing pressure on the demand for collateral. This pressure has exposed the inefficient utilization of collateral by the current infrastructure model. Waiting one to three days for equities alone with outstanding collateral for settling a trade will not be sustainable into the future.
- In particular the present nationally fragmented, high cost and unnecessarily complex processes impose a dead hand on the potential for future growth, generating "lost opportunities" and inhibiting end users from achieving their investment and capital objectives. Inefficient European legacy models are not best placed to adapt to the pressures of increased competition or meet the demands of end users for simplification and transparency. In the longer term the capacity to adapt quickly and efficiently to a different post-trade landscape and changing processes (e.g. T2S) is likely to be key to future success.
- The experience of the last ten years has illustrated how the European legacy infrastructure has been slow to adapt to even some of the relatively modest proposals for change. Consequently, unless the European system adopts a radical end-user focused framework that has an in-built capacity to change, non-European

post trade platforms will have an increasing competitive advantage with respect to their ability to offer a safer, efficient and transparent operation more closely aligned to end users requirements. This will put the development of wealth and job creation in European commerce at a significant disadvantage to our global competitors.

Solution

Any proposals designed to achieve the long-term aim of a post trade process that operates seamlessly and does not impose any friction in the decision making of investors and issuers in the market should be founded on some basic principles. While in some respects the following five system principles are a statement of the obvious, they do serve to highlight the disjointed and inefficient nature of the current arrangements. They are intended to form the core reference points for a new ambitious future proofed design of European market infrastructure where the process of clearing and settling trades does not become an end in itself but rather serves as a means by which investors' and issuers' objectives can be achieved.

1. The system architecture should follow a principle of “form following function” rather than “form following precedent”. In other words the process should directly serve the future outcomes identified as required by the end users rather than any historic or legacy industry model.
2. The form of the system architecture should not unnecessarily restrict how the markets can develop in the future to meet the changing needs of end users. Evolution of variations in form of the system will allow markets to function better and therefore lead to more successful outcomes. The system should allow for continuous evaluation and improvement.
3. The system should be able to maximise the advantages of modern processing technologies and minimise complexity by adopting organisational flatness and reducing system hierarchies with standardised processing protocols.
4. The system should ensure that there is guaranteed fair access for all market participants built into operation of the market framework.
5. System architecture should exhibit the following core attributes in order to establish and maintain market confidence:
 - a) The system should minimize the risk of a systemic breakdown.
 - b) The system should be efficient (achieving the reasonably lowest attainable total transaction cost required for the attainment of end users objectives.)
 - c) The system should be fair and create a level playing field (preventing one market participant from being unreasonably disadvantage over another.)
 - d) The system should be transparent (ensuring fair and open disclosure of market and regulatory data, including transaction cost data, and making public the governance arrangements of financial markets intermediaries and regulators.)

Conclusion

In summary, a step change improvement in the efficiency, safety and transparency of the financial market infrastructure will require that the very basic transaction “plumbing” becomes interoperable based on common transaction processing standards.

With this foundation the market infrastructure will positively enable investors and issuers to achieve their objectives and ensure that the European market is future proofed to remain at the forefront of the capital markets process.

Due to the inherent inhibitions against adopting fundamental changes to financial market infrastructure, strong regulatory and political leadership will be required to make this a reality.

Actions

<u>Action</u>	<u>Responsibility</u>
A Standardised Trading and Clearing System	
<p>Empirical evidence shows that a high level of transparency combined with the removal of unnecessary complexity leads to a higher supervision level, lower financing cost and also a lower risk profile, thus limiting the likelihood of failure. Consequently, consistent with G20 objectives, exchange and MTF based derivatives trading should be required unless there are reasonable grounds for exception.</p> <p>Further, unfair restrictions on the ability of trading venues to trade and CCP's to clear will act against the G20 objectives of migrating the trading and clearing of standardised derivatives to organized trading platforms and CCP's.</p>	Commission, Regulators
A Small Number of Utility CCP's	
<p>Requiring the clearing of OTC derivatives through CCPs' should reduce systemic risk. Central clearing will bring economies of scale arising from netting economies. These economies favour the use of a small number of utility CCPs. Fragmentation of clearing on jurisdictional lines may increase the costs and risks of clearing.</p> <p>It is recognized that the advantages of having a smaller number of utility CCP's may to some extent be offset by a reduction in competition and innovation leading to the creation of an anti-competitive for-profit monopoly. Consequentially it will be necessary to legislate for open market access for participants including access to benchmarks.</p>	Commission
Systemically Important CCPs	
<p>Due to the size and importance of the risks involved, CCPs are likely to be systemically important financial institutions. Consequentially it is essential that CCPs be subject to close prudential oversight of the same standard as that which applies to other large systemically important financial institutions.</p> <p>CCPs should be included in resolution regimes currently being developed for systemically important banks or in the alternative have an equivalent separate resolution regime that is clearly understood in the market.</p>	Commission, Regulators
Transparency on Transaction Costs	
<p>The recent trend in equities has been for a disproportionate increase in the number of trades when compared to the increase in the overall market value of trades. Because post-trade fees are charged per transaction this has resulted in post-trade costs forming a larger proportion of the total transaction costs thereby reducing efficiency and imposing a greater net cost on the end user.</p>	Commission, Industry

<p>The introduction of a less-complex transaction process described above should not only substantially reduce the net costs of operating the system but will also enable better disclosure of post-trade fees, providing a better analysis of actual cost paid by the end user.</p>	
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Chapter 5: Overall Conclusions

As noted from the outset of this report, post-trade infrastructure is a complex arena where agreement on the issues is difficult to achieve and consensus on potential solutions is rare. It is in this context that the Giovannini Barriers stand out for their conceptual simplicity and ability to engage widespread support.

Despite this, the EGMI report provides a clear narrative of how the work of the past ten years into developing a safe and efficient clearing and settlement infrastructure for Europe has progressed and sets out a comprehensive picture of the post-trading landscape by asset class.

It is evident from the continuing high costs and inefficiencies of cross-border transactions that, despite the effort and resources invested in the past decade, there is still considerable work to be done to achieve a truly pan-European post-trade infrastructure that can meet Professor Giovannini's vision of an engine for unleashing Europe's unexploited economic potential.

To this end, the Group has drawn on the extensive skills and expertise from across industry to suggest potential policy options to deliver this. There is widespread consensus on the importance of the need for action to integrate the EU's post-trading landscape.

Having established the main problems that currently exist, and provided a range of policy alternatives to address them, it is important to reiterate that any publicly sponsored initiative in the field of market infrastructures faces a coordination challenge. It will be critical to maintain the momentum of any initiative that is pursued in the future.

Annex I Regulatory Gap Analysis

Given the structural differences between the different layers of the securities processing chain (trading, clearing and settlement), it has been agreed among the Infrastructure Associations, FESE, EACH, and ECSDA to create an analysis for clearing and settlement. This analysis brings in a distinction between cash and OTC transactions, and asset classes, where relevant, and seeks to identify particular participant concerns.

Clearing

	Issues	Initiatives already addressing these issues	Possible future solutions to address the remaining gaps
Efficiency	<p>Fees from infrastructures account for a small proportion of the total costs of trading faced by investors, the biggest portion of the cost belong to custodians and intermediaries. (IV, IF, IT)</p> <p>Issues related to cross-border barriers are less relevant in the case of derivatives markets, as much if not all post-trade processing is handled by CCPs.</p>	<ul style="list-style-type: none"> • FIA / FPL Post Trade Working Group (PTWG), which is following the area of allocations (give-up/take-up). Objective is the global standardization of clearing workflows on the basis of FIXML. • Cross-border use of collateral addressed by Financial Collateral Directive (FCD) • Diversity of IT platforms/interfaces (IT, IF) addressed by SWIFT protocol 	<ul style="list-style-type: none"> • Monitor progress on industry initiatives
Safety	<p>CCPs have proven to be resilient during the recent crisis and there is a desire to ensure that this continues to be the case in the future. The absence of a common European authorisation framework means that the legal framework for CCPs still differs greatly from country to country. Specific aspects include a regulatory</p>	<ul style="list-style-type: none"> • ESCB-CESR and the existing CPSS-IOSCO recommendations constitute a common framework for all European CCPs, which will be built upon by EMIR and the revised CPSS-IOSCO Principles for Market Infrastructures. The latter will further strengthen and harmonise supervisory and oversight practices across markets and across infrastructures (with CSDs, payment systems, trade repositories) • The forthcoming European Market Infrastructure Regulation (EMIR) will create a common EU authorisation regime for CCPs, with harmonised basic 	<ul style="list-style-type: none"> • A need for broad consistency between the requirements in the revised CPSS-IOSCO Principles, ESCB-CESR Recommendations, EMIR, and future technical standards to be developed under EMIR (requiring the involvement of both ESMA and EBA as well as possibly other authorities)

desire to strengthen common (credit, liquidity and operational) **risk mitigation standards**, as well as deflecting the potential for **risk contagion**, protection of member and **client assets**, and introducing a robust framework for dealing with the risk of **CCPs' default, failure and insolvency**. (IS, IV, IT, IF)

prudential requirements including on governance, risk mitigation and protection of assets.

• CCPs are also affected by other European legislation including:

- The **Settlement Finality Directive** (SFD) and the FCD, which provide a common legal basis for transfers of cash, securities and collateral;
- **SLD**, which aims to improve legal certainty of cross-border securities transactions within Europe; and
- The **Commission's initiative on crisis management** arrangements for banks covers some infrastructure relevant issues such as close-out netting
- **Capital Requirements Directive**

• Risk of defaulting participant in payment and securities settlement systems dealt with in **Settlement Finality Directive** (SFD) and **Financial Collateral Directive** (FCD)

• **EU Competition law**

• (E) **Code of Conduct** rules apply (price transparency, access and interoperability and service unbundling)

• **MiFID** resulted in strong competition at trading layer, leading to competition also at clearing layer, demonstrated by dramatic reductions in CCP fees over the last 4-5 years

• **SLD** provisions on applicable law could lift restrictions on location of securities held as collateral

• **EMIR**, by creating a common EU passport for CCPs, could make it easier for CCPs to expand their business cross-border; complement the Code of Conduct on the access and interoperability provisions (E) and (F).

• It should be avoided that CRD ends up putting EU CCPs at a competitive disadvantage globally (e.g. if the US does not implement the same approach)

• It should be avoided that CRD ends up incentivizing bilateral risk management over CCP clearing

Competition /Innovation

While in the past there has been a focus on stimulating competition among market infrastructure (e.g. through MiFID for trading of cash equities); the focus is now firmly on enhancing the safety of CCPs. CCPs do however continue to innovate, particularly in the area of developing new clearing services for OTC derivatives, but this process is within the context of respecting enhanced prudential standards. (IS, IV, IT, IF)

Remarks: Issues are common to all asset classes at the level of CCPs. Where an issue is specific to a given asset class, this is indicated in parentheses
 (E): equities, (F): fixed income, (O): other (UCITS etc.). IV = Investors, IF = Infrastructures, IT = Intermediaries and IS = Issuer.

Settlement

	Issues	Initiatives already addressing these issues	Possible future solutions to address the remaining gaps
Efficiency	<p>Differences in legal and fiscal regimes, as well as in national market practices, mean that cross-border securities transactions are more costly for infrastructures (IF), investors (IV), issuers (IS) and intermediaries (IT).</p> <p>(O) Funds processing is still lagging behind in terms of automation and important efficiencies can still be gained. (IV, IT, IF)</p>	<ul style="list-style-type: none"> • European market standards on corporate actions and general meetings • Commission recommendation on withholding tax (based on FISCO recommendations) → non-binding • Various market initiatives (Link Up, ESES...) • TARGET2-Securities aims to improve efficiency and reduce costs for transactions in all cash instruments • Draft Securities Law Directive (SLD) should contribute to remove some of the legal barriers to efficiency • (O) Initiatives like the EFAMA fund processing passport and order routing services developed by CSDs are attempts to increase automation and efficiency in the funds industry • (E) A Harmonised Settlement cycle (T+2) is contemplated through market action, ahead of the introduction of Target 2 Securities in September 2014 	<ul style="list-style-type: none"> • Industry needs to demonstrate that these have been implemented effectively. • More needs to be done by Member States to address fiscal barriers (T-BAG) <p>Harmonisation efforts in general should be further increased as, in particular, it has now become widely recognised that without appropriate harmonisation, T2S will not produce the expected benefits of cost reduction for cross-CSD settlement.</p>
Safety	<p>CSDs have proven to be resilient during the recent crisis and there is a desire to ensure that this continues to be the case in</p>	<ul style="list-style-type: none"> • ESCB-CESR recommendations and the existing CPSS-IOSCO principles and recommendations constitute a common framework for all European CSDs, which will be built upon by the CSD legislation and the 	<ul style="list-style-type: none"> • A need for broad consistency between the requirements in the revised CPSS-IOSCO Principles, the CSD Legislation, and future ESCB-

the future. The absence of a **common European authorisation framework** means that the legal framework for CSDs still differs greatly from country to country. Specific aspects include a regulatory desire to strengthen common (credit, liquidity and operational) **risk mitigation standards**, as well as deflecting the potential for **risk contagion**, protection of **client assets**, and introducing a robust framework for dealing with the risk of **systems' default, failure and insolvency** (IS, IV, IT, IF)

Competition /Innovation

There is a desire to stimulate competition between CSDs in relation to **issuance, settlement and custody**, as well as choice of infrastructure (for issuance) and access rights (for participants and regulated markets). (IS, IV, IT, IF)

revised CPSS-IOSCO Principles for market infrastructures. The latter will further strengthen and harmonise supervisory and oversight practices across markets and across infrastructures (with CCPs, payment systems, trade repositories)

- The forthcoming **CSD legislation** will create a common EU authorisation regime for CSDs, with harmonised basic prudential requirements including risk mitigation, protection of client assets, reducing settlement fails and mitigating contagion risk
- The **Settlement Finality Directive (SFD)** and the Financial Collateral Directive (FCD) provide a common legal basis for transfers of securities and collateral.
- **SLD** aims to improve legal certainty of cross-border securities transactions within Europe
- **Commission's initiative on crisis management** arrangements for banks covers some infrastructure relevant issues such as close-out netting

- Access rights in **EMIR** and **CSD legislation**; enhancement in **MiFID**
- **EU Competition law**
- (E) **Code of Conduct** rules apply (price transparency, access and interoperability and service unbundling)
- Proposed Lifting of Barrier 9 in the **CSD Legislation**
- **TARGET2-Securities** is expected to stimulate competition between CSDs (especially by encouraging CSDs to increasingly act as "investor CSDs" for their clients)
- **SLD provisions** on applicable law could lift restrictions on location of securities
- The **CSD legislation**, by creating a common EU passport for CSDs, could make it easier for CSDs to expand their business cross-border

ESMA Recommendations

- See previous bullet point
- The SFD and SLD have been recently revised. Further analysis may be required in the light of the application of the SLD
- The Commission will explore further these issues for infrastructures by end-2011
- There is a need for consistency in access rights between these measures
- (E) Differences in national law (corporate law, etc.) would need to be addressed to have real issuer choice of a CSD

Remarks: Most issues are common to all asset classes at the level of CSDs. Where an issue is specific to a given asset class, this is indicated in parentheses

(E): equities, (F): fixed income, (O): other (UCITS etc.).

Derivatives are not included separately in the settlement table because these transactions typically do not settle at such in CSDs (only insofar as a delivery of underlying eventually occurs, hence the focus on CCP clearing for OTC derivatives).

ECSDA does not believe that a separate category of "Innovation" is necessary as such although competition and market opening will encourage innovation and product development, and aspects of it have been included under "competition".

IV = Investors, IF = Infrastructures, IT = Intermediaries and IS = Issuer.