

## **Derivatives clearing, central counterparties and novation:**

### **The economic implications**

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#### **Abstract**

Derivatives market central counterparties play an important role in exchange traded and some OTC derivatives markets. They exist side by side with bilaterally-cleared derivatives. These two clearing structures share common conceptual elements—netting, credit risk mitigation—though they differ in important details with attendant implications for market structure and systemic risks. That both clearing structures co-exist strongly suggests that neither structure is dominant. The continuing evolution of derivatives clearing involves a tension between public and private interests and the legal environments, both internationally and in particular jurisdictions, which govern derivatives contracts and regulatory agencies. This paper develops a framework for analysing the economic and legal considerations, the public policy choices facing regulators as clearing structures compete and evolve, and the private interests that are at stake.

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## Introduction

Derivatives clearing has aspects that differ from those of payments and securities clearing. Unlike payments and spot market securities transactions, which are completed in a few days at most, derivative contracts— such as futures, options, and swaps— remain outstanding for months or even years before being completed (i.e., exercised, mature or cancelled through offset or mutual agreement). Primary securities, such as stocks and bonds, also have long or indefinite maturities.<sup>1</sup> However, while the transfer of ownership in long-dated primary securities is handled by clearing and settlement systems, the enforcement of contract provisions (i.e. claims against the security issuer) is not.<sup>2</sup> By contrast, derivatives central counterparties (CCPs) are structured to ensure performance of the recurrent contractual obligations embedded in derivatives positions and to manage and mitigate the credit risk of counterparties during the lifetime of the contract. These functions are frequently bundled with clearing of derivatives trades and settlement of payments attendant to derivatives trades and positions, but that need not necessarily be the case.<sup>3</sup> CCPs interact with central securities depositories, intermediaries and custodians, and payment systems. Were the risk management measures of CCPs to fail, this would have consequences for the sound and reliable operation of a number of other participants and markets.

The issues that arise when considering the advantages and disadvantages of derivatives central counterparties are more complex and far reaching than those of payments and securities settlement, although there is some overlap. The evolving scope and structure of derivatives CCPs are areas of increasing regulatory and market concern. This paper will develop a framework for analysing the economic and legal aspects of CCPs. We shall contrast the central clearing, settlement, and risk management of derivatives through derivatives CCPs—as is typical of, though not limited to, exchange traded derivatives—with the ad hoc bilateral arrangements typical of over-the-counter (OTC) derivatives. Particular attention will be paid to potential efficiencies, the relation to derivatives market structure, necessary legal

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<sup>1</sup> After the purchase of primary securities has been concluded, holding them also involves unilateral obligations on the part of the issuer. This is also true of most options: once the buyer has paid for the option, only the writer is under a performance obligation. Most derivatives are, however, executory contracts, which involve promises by both counterparties to perform in the future, perhaps on a contingent basis.

<sup>2</sup> While an exchange may delist a firm that fails to perform in various ways, the exchange does not provide a mechanism for guaranteeing compliance with contractual obligations embedded in the securities themselves. Enforcement of primary security contract provisions is generally left to the courts.

<sup>3</sup> The acronym CCPs is sometimes used to refer to institutions clearing payments and securities trades. For expositional convenience, the term will be used in this paper to refer to derivatives market central counterparties.

and regulatory underpinnings, and the implications of alternative derivatives clearing structures for systemic risk and for containing systemic shocks when they occur.

## 1. Derivatives CCPs

Like payments systems and securities settlement systems, CCPs increase operational efficiency in a number of ways. CCPs offer services which are crucial for the trading of derivatives. In order to enter into a derivatives contract, an initial margin is posted to cover all obligations of a member vis-à-vis the CCP and a variation margin is collected daily. As counterparties to all trades, CCPs are entitled to make the respective calculations, marking-to-market open contracts and collecting or paying respective amounts. These are essential services which help market participants enter into derivative contracts.

However, unlike other market structures, credit risk mitigation is one of the primary purposes of CCPs. Payments systems and securities settlement systems perform conceptually simple functions: to ensure that transactions are completed as the parties intend (be it through payments orders or securities transfers) with minimal risk to the continued flow of transactions and failure to complete the transactions.<sup>4</sup> While some payments and securities settlement systems may extend very short-term credit (e.g. daylight overdrafts or intraday credit) to participants as a means of increasing transactional efficiency, risk-taking by the central counterparty through which payments flow, or through which securities trades are cleared and settled, is not inherent in the process. Credit extension in payments and securities settlement systems is a system design choice.<sup>5</sup> Under normal circumstances short-term credit extension ensures the orderly flow of transactions. Such voluntary risk-taking as does take place is short-term because the underlying transactions being processed are transitory.

By becoming counterparties to derivatives contracts, CCPs guarantee the performance of those contracts for far longer than do financial institutions clearing payments or securities trades. In principle, CCPs need to manage risk for a time that is considerably longer than the few hours typical of payments systems or the few days typical of securities settlement systems.<sup>6</sup> The positions they enter into in general endure until maturity, exercise, or termination through the offset of the derivatives contracts they become party to. In this respect, CCPs need more market sensitive risk management procedures, margining and

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<sup>4</sup> Payments and securities settlement are, of course, extremely complex in their details.

<sup>5</sup> Payments securities settlement systems have evolved mechanisms for monitoring and limiting risks, particularly following the failure of Herstatt Bank in 1976 and Angell Report (1989) and the Lamfalussy Report (1990), on payments systems.

<sup>6</sup> A securities trade is completed in two or three days depending on the country and the securities type.

collateral arrangements for marking-to-market daily contracts with a longer maturity. Thus, the taking-on of counterparty credit risk is inherent in the function of CCPs—to serve as a counterparty. Therefore, risk mitigation is a critical component of CCP design. By offering those services to manage risks inherent to derivatives, CCPs serve the derivatives exchanges and market participants.

The CCP periodically calculates the change in value of the positions of its members from the most recent settlement prices to determine gain or losses and the side with losses has to pay funds for futures or post collateral for options. All clearing members deposit collateral as part of their duties of becoming clearing members. CCPs set their performance collateral requirements at levels that would be expected to cover one day's market move.

Derivatives CCPs perform a number of major functions. The first is risk mitigation and mutualisation. Through the process of novation, a bilateral contract between two market participants is replaced by two bilateral contracts between each of the original counterparties and the CCP. Following the novation, which is usually handled automatically, the CCP is the universal counterparty to all contracts. This means that rather than monitoring and managing credit risk vis-à-vis original counterparties individually, each market participant need only be concerned with the CCP's credit risk. This greatly reduces monitoring costs and allows market participants to trade anonymously (with little or no information about their counterparties), thus increasing market liquidity.

The CCP's counterparty credit risk is managed by means of margin and capital requirements that are designed to prevent, as a first instance, the default of an individual member from imposing costs on the CCP. Margin requirements are to cover the exposure between the time of the margin collection and the time of a likely close out, a period which varies and may be two days or even longer. Should an individual member's losses exceed the member's resources controlled by the CCP, risk mutualisation spreads those losses over the other members, reducing their impact on any one member. Dealers in OTC derivatives that are cleared bilaterally also impose collateral, and sometimes capital, requirements on their counterparties to mitigate default risk. In this regard they are similar to CCPs. However, bilateral clearing of derivatives does not provide the second line of defence: mutualisation. Thus, one counterparty's losses may be transmitted directly to one or a few dealers with potential adverse consequences for those dealers, rather than being dispersed throughout the market. Pillar II of Basel II, which addresses risk-based capital standards, recognizes this distinction between bilaterally-cleared and CCP arrangements. These guidelines permit competent authorities (regulators) to attribute an exposure value of zero to OTC derivatives cleared through a CCP if participants fully collateralise daily their exposures with adequate

collateral.<sup>7</sup> Authorities may set capital requirements equal to the margin required by the CCP, provided that certain conditions are met.

CCPs also solve a potentially disruptive information problem. When a major player in bilaterally-cleared derivatives markets fails, it is not immediately apparent to the remaining market participants: who is absorbing the losses, how big the losses are, and whether the failed firm's counterparties are themselves threatened by the failure. This uncertainty is mitigated when there is a single counterparty with an effective (and perceived to be fair) means of allocating losses across the whole market. The financial condition of the CCP is (or, at least, should be) generally widely known. Furthermore, since the CCP is normally market neutral (i.e. it has offsetting long and short positions in every contract it is a counter party to), it has little incentive to use the information it is party to (i.e. everyone else's positions) in order to earn profits at the expense of other market participants.<sup>8</sup> This perceived neutrality and ability to disperse losses widely may be expected to do much to mitigate the information concerns that can infect bilaterally-cleared markets in times of market stress.

A third major effect of having a central counterparty is to increase market liquidity through the ability of market participants to freely enter and leave the market. Market entry is enhanced through the previously mentioned ability to trade anonymously; the CCP enforces rules designed to mitigate credit risk, and other participants only care that the counterparty has been authorized to trade by the CCPs; a fact readily ascertainable. Exiting positions is aided by enforceable netting rules. A market participant with a no-longer-desired position need only enter into an offsetting but otherwise identical position. Since the new position is automatically converted to a position with the same counterparty as the pre-existing position, namely the CCP, the two positions can be netted and, if permitted by the rules of the CCP, as is usually the case, cancelled out. This cancellation, if legally enforceable enables an exiting market participant to be free of all residual legal, market, and credit risks, and to the degree that exit frees up collateral, to reallocate the collateral they had posted to other uses (including other derivatives positions).

Bilaterally cleared derivatives provide only limited ability to exit. Under derivatives master agreements, identical offsetting contracts with the same counterparty are netted against each

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<sup>7</sup> See e.g., the amendments to capital adequacy rules proposed by the European Commission in line with Basel II: Annex III of Volume I and Annex I of Volume II of the Proposal for Re-casting Directive 2000/12/EC of the European Parliament and of the Council of 20 March 2000 relating to the taking up and pursuit of the business of credit institutions and Council Directive 93/6/EEC of 15 March 1993 on the capital adequacy of investment firms and credit institutions COM (2004) 486 final of 14.7.2004, Volumes I and II, [http://www.europa.eu.int/comm/internal\\_market/bank/regcapital](http://www.europa.eu.int/comm/internal_market/bank/regcapital).

other, thus eliminating market risk and freeing-up collateral, but these contracts are not thereby cancelled leaving the market participant with perhaps miniscule legal and market risk (should netting prove unenforceable in the future). Market risk in bilaterally-cleared derivatives markets can be eliminated by entering into an offsetting contract with any counterparty, but at the risk of incurring credit risk if the counterparty chosen is not the counterparty to the original contract. If counterparties to matched offsetting contracts differ and one counterparty fails, netting does not occur and the position is no longer market neutral.<sup>9</sup> Furthermore, collateral needs are increased rather than eliminated if the counterparties to the old and new contracts differ. These two impediments to trading with new counterparties in order to eliminate a position—credit risk and collateral costs—create strong incentives to return to the original counterparty to unwind an exposure.<sup>10</sup> This creates a potential difference in bargaining position between dealers and end-users.

## **2. Systemic risk implications of bilateral versus CCP clearing**

Analysing the systemic risk implications of alternative methods of clearing derivatives requires looking at two components: the probability of failure and the cost of failure. It also requires looking at different mechanisms by which failures of one market participant are transmitted to other participants. We will consider four systemic risk scenarios:

- 1) The failure of one firm leading to the knock-on failure of other firms. Knock-on systemic risk is predicated on large concentrated bilateral exposures, so that one firm's default can leave another firm immediately insolvent.
- 2) The failure of one firm leading to informational asymmetries that cause trading to freeze up, preventing participants from managing their positions in adverse market conditions with concomitant losses. This risk is predicated on the inability of market participants to understand the complete network of counterparty exposures.

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<sup>8</sup> CCPs are either "utilities" seeking to minimize costs subject to a break-even constraint, or they are for profit but derive their profits from transaction fees and miscellaneous sources (e.g. interest earned on margin accounts) rather than trading profits.

<sup>9</sup> If A has a long position with counterparty B and an otherwise identical short position with C, A is market neutral with respect to the risk underlying the derivative in question. However, if B were to fail, not only would A potentially realize a loss on the contract with B, but termination of that contract would leave A exposed to market risk through its remaining contract with C. On the other hand if both the long and the short contracts were between A and B, and netting is enforceable, A's position would be substantially unaffected by default on B's part. If offsetting identical contracts were automatically mutually cancelled, as is common practice with CCPs, A would not have a position and would thus be entirely immune to B's failure.

<sup>10</sup> Bliss and Kaufman (2006) discuss the impact this has had on the structure of OTC derivatives markets.

3) The failure of a major market participant necessitating a large number of counterparties simultaneously replacing defaulted contracts (to maintain hedges) resulting in severe liquidity strains and perhaps market breakdown. This risk derives from the search costs and dealer portfolio risk management needs attendant to simultaneously replacing a large number of contracts, the costs involved in establishing new counterparty relations, and to the potential for asymmetric bargaining power to impose additional costs on end-users.

4) “Common shock” risk whereby a major economic shock simultaneously affects a large number of firms. While the source of this risk is exogenous, the costs imposed are in part a function of the same factors as the single-firm failure sources of risk. The ability of the financial system to absorb the exogenous shock is a function of the network of exposures and the capacity of the nodes in the network to absorb or dissipate the shock, and due to the informational asymmetries and their effect on behaviour.<sup>11</sup>

Systemic risk is reduced, in the first instance, by reducing the default risk of individual market participants. Capital regulation and prudential supervision contribute to this goal. However, there are costs of reducing default risk for individual firms that limit this approach. Thus, market mechanisms and structures are important for containing the failure of individual firms (or absorbing large macroeconomic shocks). The better the financial system is able to absorb individual firm failures, the less regulators need rely on costly capital and supervision to protect the financial system.

Derivatives markets have developed mechanisms for mitigating counterparty risk. These include the widespread use of collateral, legal protection of collateral arrangements, legally enforceable netting agreements, and standardized contracts to reduce legal uncertainty. These mechanisms apply equally to bilaterally-cleared and central counterparty arrangements. However, CCPs provide additional advantages, and some potential disadvantages.

#### A. The advantages of CCPs

CCPs may be expected to help reduce the probability of failure of individual members through imposition of current best practice risk management procedures. For instance, US

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<sup>11</sup> Note that only the first scenario necessarily involves secondary failures. The others are more broadly concerned with “market failure.” The likelihood of a total breakdown of financial markets is extremely remote, and more likely to be related to political or operational factors (war, earthquake). However, liquidity crises of varying degree are relatively frequent, if transitory. Transitory disruptions of normal market functioning do impose costs on market participants and may cause some participants to fail. Whether these costs (and the consequences of secondary failures) constitute “systemic risk” and to what degree markets and regulation should be structured to avoid these risks is an open question.



futures exchange clearing houses, in addition to specifying the margins that clearing members must maintain with the clearing house, set minimum margin requirements for customers of clearing members; though these margins are maintained by the member rather than the exchange. Furthermore, by enhancing market liquidity CCPs facilitate member risk management. However, the incremental effects of these benefits vis-à-vis a system of bilateral clearing by dealers is likely to be marginal if dealers are managing their counterparty risks effectively.

Assuming that the major derivatives dealers are managing their counterparty risk appropriately, the failure of a major dealer remains a possibility. A major benefit of CCPs over bilateral clearing is to put in place a structure designed to absorb the failure of a member, rather than to reduce the probability of failure of any given member. Member capital requirements, where they are binding, limit the probability that a member will fail when faced with an adverse market shock. Through the design of clearing member margining and collateral requirements, CCPs reduce the probability of immediate propagation to other solvent members of the losses incurred by an insolvent member. If losses by the insolvent member exceed its margin and collateral posted with the CCP and then its capital, the remaining losses are spread across the solvent members of the CCP.<sup>12</sup> The CCP with its ability to mutualise losses will, if the contractual arrangements with members are sufficiently robust to provide the necessary liquidity, be able to absorb defaults far better than any individual member could in a bilaterally-cleared system. Thus, CCPs provide mechanisms for first containing the effects of insolvency of a member and then widely dispersing the remaining effects. These mechanisms greatly reduce the probability that the insolvency of any one market participant would cause the failure of one or more other participants.

CCPs also reduce the probability of market failure due to informational asymmetries following the failure of a major market participant. The same mechanisms that mitigate the effects of one firm's failure on others may be expected to limit the concern that other firms are likely to fail as a direct result of that failure. Since a properly structured CCP can handle the default of an individual member, solvent members need have less concern about other firms failing. In a bilaterally-cleared market, a single-firm failure could cause participants to retrench, to require collateral where they had not done so before, to increase haircuts on risky collateral, to attempt to balance their books to avoid market risks, all with possible adverse effects on the market. The simultaneous failure of multiple CCP members due to a severe common macro-economic shock could prove challenging for a CCP to absorb, but then a

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<sup>12</sup> It is also possible for an otherwise solvent counterparty to default on margin or collateral calls, effectively exiting the market. However, the member remains liable for losses.

bilaterally-cleared system would be expected to have similar problems, likely to be exacerbated by the informational problems already discussed. In either case, intervention of regulatory authorities may be necessary. With properly designed margining, collateral and position monitoring systems a CCP system may be expected to withstand greater common shocks than a bilaterally cleared system due to its greater ability to mutualise losses.

In a centrally-cleared CCP system two factors ameliorate the impact of uncertainty as to who else might have been severely compromised by the market shock. Firstly, by being the counterparty to all positions the CCP is in a unique position to immediately understand the positions of all market participants. In a bilaterally-cleared market, a given dealer will know their own positions vis-à-vis their counterparties, but they cannot know their counterparties' positions vis-à-vis other dealers, and thus cannot form a clear picture of their counterparties' risks. The natural response to uncertainty in times of stress is heightened risk aversion and a tendency to "act conservatively" and thus impose greater precautionary measures than a fully informed central counterparty would do.

Secondly, the CCP, with the appropriate rules and legal powers, is in a strong position to manage the risks of a member that becomes distressed. It can require the appropriate additions to collateral, and failing that can unwind some or all of the positions in an orderly manner. Knowing this, and that any future losses that will be incurred in the process of shutting down the (as yet publicly unknown) distressed firms will be dispersed, solvent participants will more readily participate in the market following an individual default of severe shock, making market recovery more rapid and less costly.

CCPs also serve to reduce legal risks. They provide a central forum in which market participants can concentrate their activities. The CCP can structure its rules and mechanisms to conform to the appropriate jurisdiction and to avoid conflicts of laws. Having the CCP do this, perhaps working with legislatures and regulators, is more efficient than having individual market participants duplicating the effort involved. This presupposes, however, that some degree of consistency in terms of governing law and jurisdiction exists between the clearing agreements and the derivative contracts that are traded on the market for which the CCP clears trades, though again establishing this linkage is more effectively done by a central party acting on behalf of all participants.

#### B. CCPs as sources of systemic risk

While CCPs limit the risks to other market participants and to the functioning of markets associated with the failure of a major participant, CCPs themselves become a critical component of the market so that their own failure becomes a potential systemic event. Indeed, the failure of a CCP would necessarily lead to a at least a temporary breakdown of the market

as the whole structure through which positions are established, maintained, and closed-out would be disrupted. The effects of such a CCP failure, were it to occur, might well outweigh the effects of the failure of a major dealer in a bilaterally-cleared market.

While certainly daunting, contemplating such a possibility must be put into perspective. Two points need to be considered: losses, given an event cannot be considered in isolation of the probability of that event occurring, and secondly the positions of other agents in responding to the event. In particular, we need to consider how central banks as lenders of last resort might react to both the failure of a CCP and to the alternative failure of a major dealer in a bilaterally-cleared market, as well as the incentives and political issues that surround the options facing the lender of last resort in both cases.

Highly concentrated dealer markets, as exist in many areas of OTC derivatives, are also a source of systemic risk. Two factors make CCP failure less likely than the failure of a major dealer. CCPs have the ability to mutualise losses and to spread them across a large number of market participants, thus reducing the probability of the CCPs failure; while a dealer, no matter how large, must absorb its losses directly. CCPs also provide a locus of regulatory supervision and market discipline. Since CCPs are not engaged in deliberate market risk-taking (proprietary trading on their own account), and have relatively transparent risks, systems can be designed and implementation, and supervised by regulators, to provide a high degree of confidence in the ability of the CCP to contain member failures. Individual dealers, with their multiple lines of business, proprietary data and opaque legal structures are much more difficult to monitor, even by regulators with examination powers.

The last line of defence in the event of a systemic crisis is the regulatory authorities, whether it be the central bank providing liquidity or a financial services authority providing moral suasion and regulatory discipline. However, the intervention of regulatory authorities in financial crises is fraught with moral hazard and political uncertainties.<sup>13</sup> CCPs are unlike individual market participants. They are quasi-utilities. Their structure ensures that losses are first borne by individual members and then by members generally. Thus, the intervention of the central regulatory authorities does not remove the threat of losses to market participants; it only serves to contain the aggregate losses and to ensure that markets continue operating. While the prospect of such intervention may lead the CCP itself to take undue risk (on behalf of its members, for instance by reducing margin requirements), their relative transparency and simplicity provides a more suitable focus for regulatory monitoring than is the case in a

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<sup>13</sup> Witness the debate over the New York Federal Reserve Bank's intervention in the near failure of Long Term Capital Management in 1998. See also Goodhart (2005) for a discussion of issues arising in co-ordinating between lenders of last resort (central banks), prudential supervisors, and political agents.

concentrated dealer market. Finally, because of their quasi-utility status, central bank intervention in a distressed CCP situation is likely to be less politically troublesome, and therefore more likely to be made on the merits, rather than the bailing out of a single for-profit market participant. This argument is particularly relevant in the euro area where the each national central bank is responsible for providing emergency liquidity assistance (ELA) to individual financial institutions while keeping the ECB informed.<sup>14</sup> National authorities entrusted with the supervision and oversight of the CCP have incentives to effectively monitor risks emanating from those CCPs established in their jurisdiction both because the taxpayers of that jurisdiction may bear the direct costs of a CCP's failure if they are not contained within the CCP membership, and because losses to local members could adversely affect the local economy.

To the extent that a CCP offers services to participants from other markets, the incentives become more complex.<sup>15</sup> Recalling that CCP members form the second line of defence in the event that a member fails, markets whose financial institutions participate in foreign CCPs may be adversely affected through member losses, even though they would not bear the cost of providing liquidity to the CCP. Where the potential harm of a CCP failure to local institutions is small, and the benefits to costly liquidity provision are likely to accrue to foreign market participants, CCP regulators may consider letting the CCP fail rather than intervene. Knowing that they have little at stake directly or indirectly, they may also be less rigorous in their ex ante supervision, thus increasing the probability of such a failure.

That being said, in the case of a general liquidity crisis resulting in a gridlock of the payment system, for instance, the direct involvement of the supra-national Eurosystem<sup>16</sup> could be expected.<sup>17</sup> It is highly likely that a major CCP's failure would adversely impact the payment system in which the CCP participates, in which case the Eurosystem would be expected to act. The ECB is empowered to regulate clearing and payment systems within the Community and between the EU and other countries in order to ensure their safe and sound operation.<sup>18</sup> Thus, the Eurosystem is equipped to play a leading role in facilitating cross-border cooperation

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<sup>14</sup> C. Kahn and J. Santos, "Allocating Lending of Last Resort and Supervision in the Euro-Zone", 2002, draw their results from the harmonised supervision for banks. These results may not extend to CCPs which are generally not banks, and therefore do not benefit from the same cross-border institutional arrangements.

<sup>15</sup> This situation is analogous to home country provision of deposit insurance for internationally active banks, though in the case of deposit insurance the guarantee is explicit.

<sup>16</sup> The Eurosystem includes the European Central Bank and the national central banks that have adopted the euro operating through the decision making bodies of the ECB.

<sup>17</sup> Introductory statement delivered by the ECB President on 26 October 1999 upon the presentation of the ECB annual report to the Parliament, see [http://www.ecb.int/press/key/date/1999/html/sp991026\\_1.en.html](http://www.ecb.int/press/key/date/1999/html/sp991026_1.en.html).

<sup>18</sup> Article 22 of the Statute of the ECB and the ESCB.

based on the existing harmonisation of supervisory and legal rules within the EU and the mutual recognition of decisions taken by home country authorities. Through its institutional mechanisms for co-ordinating regulatory standards, the Eurosystem should be able to control the adverse incentive effects of international membership of CCPs previously mentioned, at least within the euro area.

### **3. History, structures and trends**

CCPs have their origins in 19th century futures exchanges. Futures trading, which involves long-dated and therefore credit-risky positions, led to an evolution of credit risk management structures culminating in the modern central counterparty structure.<sup>19</sup> Originally, exchanges were merely forums for transacting. Settlement and risk taking was handled on a bilateral basis. Membership served to provide some certification of the counterparties (members) and, since membership was valuable, provided disincentives to default.<sup>20</sup> The next step in the evolution of CCPs was the development of clearing “rings”, collections of members that agreed to accept each other’s contracts. This development arose, less for credit risk reasons than for liquidity; joint acceptance of ring members’ contracts created for the members the ability to more easily close out contracts, and thus enhance their usefulness. Rings did not however eliminate the essential counterparty specific nature of contract credit risk in the event of default. Exchanges and rings gradually evolved mechanisms for mitigating credit risk—margins, member transparency requirements, and by the late 19th century member-funded exchange-controlled pools to insure losses due to member default (Krozner, 1999). It was not however until the founding of the (Chicago) Board of Trade Clearing Corporation (BOTCC) in 1925 that the central counterparty with contract novation was developed. This innovation, combined with the previously developed methods for reducing member credit risk (dynamic margining, daily mark-to-market, and loss mutualization) has proven highly successful. By

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<sup>19</sup> Krozner (1999) argues that credit risk in futures contracts is fundamentally different than credit risk in banking (specifically bank note issuance). Bank demand liabilities can be presented for payment at any time, thus providing immediate verification of the ability of the issuer to meet its obligations. Futures (forward) contracts in their natural form expose market participants to significant price movements with no means of verifying the credit worthiness of the counterparty until maturity when the transaction is due to take place. The same problem, of course, applies to other long dated instruments with significant delayed payments (e.g. corporate bonds).

<sup>20</sup> Moser (1998) points out that grain elevators, which also enter into forward contracts with farmers to purchase grain at fixed prices, have had problems enforcing their contracts when prices rise. Farmers have strong incentives to default (sell the grain on the market) and the availability of alternative elevators willing to transact with defaulting farmers reduces the difficulty in doing so. Furthermore, all of the elevators customers will be similarly situated, since all farmers will be long. Elevator operators that enforce contracts too vigorously will soon find they have no farmers to transact with. Farmers in turn benefit from the asymmetric competitive position and have no incentives to devise mechanisms to reduce (their own) default risk.

the late 1990s almost all US derivatives exchanges had affiliated central counterparty clearing arrangements (Kroznner, 1999).

OTC derivatives markets remained relatively small until the 1980s, in part due to regulation, and in part due to the benefits in terms of liquidity and credit risk management provided by exchange traded derivatives. However, technological advances in financial engineering and regulatory gaps have since led to the rapid growth of OTC derivatives. These markets are now far larger (in terms of notional amounts outstanding, if not numbers of individual transactions per day) than the exchange/CCP-based markets. Credit risk on OTC derivatives markets remains primarily a bilateral matter. There appears to be no analogue to the clearing rings of the late 19th century.

Bilateral clearing serves the interests of major dealers. It protects their market power by raising barriers to entry and by reducing the ability for cross-counterparty offset, thus locking-in client counterparties. The size of the major dealers and their own risk management practices provides them with considerable diversification protection against end-user market and credit risk. Inter-dealer exposures are managed through offset and close out of redundant contracts, occasionally on a multilateral basis, and nearly complete collateral protection of remaining exposures. This suggests that for the dealers the cost/benefit trade-off of these mechanisms outweighs those of the more cooperative approaches of rings and mutualization. This may be due to the absence of a well-defined membership organization with attendant collective interests. Or it may be due to the international nature of the OTC derivatives market with attendant legal obstacles to collective solutions.

Instead, OTC markets evolved the derivatives product corporation (DPC, see Kroznner, 1999) to mitigate credit risk. These are bankruptcy remote subsidiaries of major dealers, structured to minimize market and credit risk by requiring the parent to provide offsetting contracts to ensure that the DPC remain market neutral, and for the parent to fully collateralize its exposure to the DPC. Restrictions are also imposed on (external) counterparty credit quality and activities (position limits, collateral, etc). This structure allows the DPC to obtain an AAA credit rating, even if the parent is not AAA rated.

The DPC structure provides external counterparties a degree of protection against credit risk, but it does so by making their bilateral counterparty more credit worthy, rather than by mutualizing credit risk across a broader set of market participants. If a DPC fails, the only support is the parent company. This may or may not protect the counterparties. What the DPC structure does do is protect the DPC's counterparties against the failure of the DPC parent. However, should the parent become financially distressed or fail to meet its obligations the soundness of the DPC will be called into question. This could have serious consequences.

Failure of a futures exchange member to meet a margin call will result in that member's positions being unwound. Failure of a DPC's parent to meet its collateral call could result in all its positions being unwound simultaneously. While no major derivatives dealer has failed,<sup>21</sup> the bilaterally-cleared dealer-dominated OTC market remains inherently more vulnerable to credit risk than the mutualized member-backed CCPs.

### **3.1 Access**

Whereas lack of well-defined membership has inhibited the formation of collective solutions to credit risk mitigation in OTC derivatives markets, in exchange-traded derivatives the collective solutions (CCPs) have evolved into a strategic asset of the exchanges that originally sponsored them. Access of clearing members to the CCP protects their position on the exchanges since other members must clear through them.<sup>22</sup> In addition, exchanges derive profits and market power from captive clearing houses. This has inhibited the growth and consolidation of CCPs as well as their extension to clearing OTC derivatives, though this has begun to change.

Enhancing competition in derivatives markets, while protecting the essential functions of CCPs to reduce credit risk through monitoring and mutualization of credit risk, is seen as a worthwhile objective by regulators, particularly in Europe. Certain principles apply. Clearing members need to meet credit worthiness standards, following the rules of the CCP, and establish arrangements with an approved settlement provider. CCP membership cannot be open to all. CCPs are not a utility in that sense. CCP clearing membership rules should be as open as possible to ensure open access and fair competition and not restrain members to the use of certain settlement systems based on ownership or contractual arrangements. Access criteria should be based on credit, liquidity, custody, foreign exchange and legal risk considerations, and should be subject to the existence of a robust legal framework for clearing and settlement in a number of jurisdictions, the most relevant being the law of incorporation of the member seeking access, i.e. the law that governs collateral to the extent that these laws are different from the law governing the CCP.

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<sup>21</sup> The failure of Refco in 2005, while moderate in size illustrated the practical fragility of bilateral credit risk mitigation mechanisms in the event of a dealer failure.

<sup>22</sup> Competition across exchanges limits the members' ability to exploit their clearing advantages. Krozner (1999) argues that this competition has not led to a race to the bottom on the dimension of credit risk mitigation. This makes sense, for in a system of mutualised credit risk incentives not to lower standards and protections, but to look for profits elsewhere.

This is the spirit of the European legal framework which developed the concept of open access to CCP services echoing arguments from the theory of “essential facilities”.<sup>23</sup> The EU describes an essential facility as a “facility or infrastructure which is necessary for reaching customers and/or enabling competitors to carry on their business. A facility is essential if its duplication is impossible or extremely difficult due to physical, geographical, legal or economic constraints.” The EU authorities have argued that payment systems are deemed essential in the financial sector.<sup>24</sup> It can be argued that CCP services should also be considered essential facilities because:

- (i) Traditionally CCPs are established to serve a national market;
- (ii) It is economically not feasible to duplicate CCP services owing to the cost of establishing technical and risk management arrangements;
- (iii) It is not desirable to duplicate services of the CCP since efficiency increases with the number of users and products being cleared;
- (iv) Once a CCP becomes established, network, scope, and scale effects make it difficult for de novo competitors to arise.

This has repercussions for the regulation of a CCP, in particular:

- (i) Denying access to an essential facility for other than prudential reasons may constitute an abuse of a dominant position by the CCP operator under Article 82 of the Treaty. For risk ground considerations see below.
- (ii) The CCP operator should not make access to its services conditional upon using preferential trading or settlement service providers or direct its participants to using the group’s other services;
- (iii) Participants should be provided with transparent pricing and the CCP operator should not engage in cross-subsidizing other entities of the group to which the CCP belongs.

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<sup>23</sup> The concept of essential facilities, in its application in the EU under Art. 82 of the Treaty establishing the European Community (the Treaty) is different than in the US: ECJ judgement of 6 April 1995, ECR 1995, I-743 (47, 52); RTE & ITP v Commission ECJ judgement of 6 October 1994, ECR 1994, II-755 (84); Tetra Pak v Commission ECJ judgement of 14 November 1996, ECR 1996, I-5951.

<sup>24</sup> See the results of Commission’s scrutiny in the case of *ECU Banking Association* in the Report on Competition Policy (1996) Nr. 108.



Accordingly, the Directive on Markets in Financial Instruments (MiFID)<sup>25</sup> which is scheduled to be implemented in the national laws by 2007<sup>26</sup> will result in the following changes:

- (i) Local CCPs will be obliged to accord access to remote EU participants and may not discriminate against them;
- (ii) Local participants may choose CCP services in another Member State;
- (iii) Participants in European exchanges may designate a settlement system of their preference, provided that certain safety and regulatory conditions are met. This requirement has indirect repercussions for CCPs because these may not limit their members to the settlement services of the already designated settlement system and they have to accept another settlement provider if public authorities are satisfied;
- (iv) Finally, European exchanges may choose any CCP (or settlement system) from another Member State.

The European Commission, in its Communication of 2004, intended to expand the open access to and from any regulated market, CCP and securities settlement system, and participant.<sup>27</sup> Article 34(3) of the MiFID allows CCPs to refuse access on “legitimate commercial grounds”, while CPSS-IOSCO Recommendation 2 for CCPs suggests that limiting access on grounds other than risks should be avoided. The contradiction can be explained because the non-binding recommendations were adopted in 2004 six months after the adoption of the MiFID and most likely there was no cross-pollination. A careful reading shows that the MiFID strikes a balance between private interests by ensuring the right of investment firms to opt for the CCP of their choice without prejudice to the CCPs’ right to refuse on “reasonable commercial grounds” to make their services available. No harmonised framework for CCPs exists, and MiFID does not address this issue. That said, if central clearing is a quasi utility, access criteria should be defined objectively in a non-discriminatory way in advance so that those who fulfil them are granted access. Currently, access criteria can be seen in the light of two pillars: First, EU freedoms of services and prohibition of discrimination should also be a compass for the EU CCPs providing cross-border services.

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<sup>25</sup> While primarily concerned with trading arrangements, some provisions deal with financial market arrangements. Articles 34, 35 and 46 of Directive 2004/39 of the European Parliament and of the Council of 21 April 2004 on markets in financial instruments amending Council Directives 85/611/EC and 93/6/EC and Directive 200/12/EC of the European Parliament and of the Council and repealing Council Directive 93/22/EC, OJ L 145, 30.4.2004, p. 1.

<sup>26</sup> Proposal for extending the transposition deadline COM (2005) 253 final of 14 June 2005.

Second, competition considerations are relevant when defining the powers of a CCP operator regarding access

The above policy issues surrounding access merit a careful consideration in a legal act devoted to clearing and settlement rather than a reference in an act regulating trading. Legal and regulatory frameworks should be harmonised and neutral so that vertical or horizontal consolidation becomes the result of market forces becomes possible. This is not currently the case because there are few cross-border linkages of CCPs with exchanges and securities depositories across EU. However, technical capabilities to do so already exist and the MiFID provides a forward-looking legal framework which allows for the cross-designation of trading, clearing and settlement service providers. For true integration, the above has to be complemented by other pieces of national and possibly EU legislation to make regulatory requirements more uniform and to allow for a common passport of CCPs to offer services all over the EU.

EU competition authorities in a case dealing with central securities depositories dealing recognised that such a depository becomes an “unavoidable” central service provider whose services cannot be duplicated.<sup>28</sup> This point is relevant for CCPs as well owing to their central function for the markets whose products they clear.

Competition authorities have clearly distinguished between “primary clearing and settlement” performed by a central securities depository and “secondary clearing and settlement” performed by other intermediaries. Although the discussion focused exclusively on settlement providers holding securities in final custody, the same argumentation could be extended to CCPs. The case of the CCPs is even more interesting because CCPs are mandatory for exchange-traded derivatives. Furthermore, the Commission clearly distinguished between direct and indirect (via intermediaries) access to primary settlement. It recognised that “direct access to primary settlement” was an important separate good in itself for several reasons, among which the two basic ones, timeliness and costs, are relevant for CCP services as well. Taking into account the above similarities, we can expect a similar stance of the EU competition authorities in a case involving CCPs.

### **3.2 Transparency of prices and fees**

For competition authorities, the transparency through unbundling of prices and fees for trading, clearing and settlement is crucial so that parties are able to make informed decisions

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<sup>27</sup> See COM(2004) 312 final, p. 16.

<sup>28</sup> Commission Decision of 2 June 2004 relating to a proceeding under Article 82 of the EC Treaty (Case COMP/38.096 – Clearstream (Clearing and Settlement)).

when selecting a system. Antitrust behaviour concerning prices and fees is so important for the smooth functioning of the clearing and settlement industry because CCPs have features of natural monopolies with network advantages.<sup>29</sup> Thus, an ideal CCP legislation should expressly stipulate that CCPs' practice should abide by competition rules and that CCP operators must be in a position to ask for clearance of their terms and conditions by relevant authorities.

#### **4. Implications for market structure – concentration, competition, costs, liquidity**

These proposals for broadening the access to and competition among CCPs could fundamentally change the structure of derivatives markets. Exchanges, which benefit from captive clearing houses, and OTC derivatives dealers, who could experience diminished power over end-users and lowered barriers to entry, are likely to resist such changes unless it can be shown that there are offsetting advantages.

Pressure to break loose the captive and national CCPs is likely to be driven by clearing members who wish to realize the cost advantages of centralized risk management and cross-product/exchange margining. Since these clearing members are also influential in exchange governance, this trend is likely to develop more quickly. Market, as opposed to regulatory, pressure to move towards CCP clearing of OTC derivatives is likely to be less rapid. It has begun to happen for certain plain-vanilla derivatives where contracts have become standardized and profit margins are small. Customized derivatives present technical problems for CCPs, and structuring them to gain the advantages of offset for the end-user is a complex challenge. Furthermore, complex products are likely to have higher margins that dealers will want to protect from possible competition. To the degree that major dealers may see their peers as too big to fail, their concerns about protecting themselves against the failure of other major dealers through cooperative market mechanisms will be absent.

It may be that, as was the case with bank payments systems in the late 19th century, it will require a crisis or series of crises (one LTCM was not enough) to convince the dominant market participants that it is in their own interest to trade-off the risk of increased competition for the benefit of mutualised credit risk management.

Expansion of CCP clearing to OTC derivatives is likely to benefit end-users in three ways. First, they will be in a better position to force dealers to compete since they can gain the

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<sup>29</sup> See the Core Principles stipulated by the US legislation in the Commodity Exchange Act 7 U.S.C 7a-1 (c) (2) (N): “Unless appropriate to achieve the purposes of this chapter, the derivatives clearing organization shall avoid-- (i) adopting any rule or taking any action that results in any unreasonable restraint of trade; or (ii) imposing any material anticompetitive burden on trading on the contract market.”

advantages of offset<sup>30</sup> and collateral reduction through the CCP. Second, the ability to easily enter and exit positions and the ability to have credit worthiness established through CCP membership, rather than with each counterparty, will lead to increased liquidity. Third, CCPs with their inherently market neutral position are more likely to provide price transparency than dealers who are not market neutral.<sup>31</sup>

The problem of CCP clearing of OTC derivatives presents a classic case of concentrated vested interests on one side and diffuse interests on the other. In such situations it is natural to look to legislation and regulation for a solution. One should be cautious though. In the first place, not all OTC derivatives products are natural candidates for central counterparty substitution. By its nature a CCP is a passive agent carrying out its functions in an automated and predictable manner. Such judgement as it exercises is devoted to credit risk management and contract design. Complex derivatives products that require expertise to structure and hedge are not suited to CCP treatment. The CCP has not the expertise to engage in valuing and managing complex, potentially unique positions. In the second place it is important to understand the nature of the legal and economic structure of current institutions. Where laws and regulatory structures have evolved to suit the current environment, for instance the US regulatory distinction between exchange traded and off-exchange traded derivatives, these become an impediment that needs to first be addressed before change can be hoped for.

## **5. Legal issues**

CCPs are important because they perform valuable risk management functions for the markets and products they serve. These risk management tools in the form of collateral, margin, financial resources to cover default, and netting must be at all times valid and enforceable. In fact, the assumption is that no party and no third party may interfere with the function of the CCP.

The functioning of derivatives central counterparties hinges on the enforceability of two legal processes: 1) novation—the replacement of the original contract between two counterparties with two offsetting contracts between the original counterparties and the CCP, and 2) netting—the ability to offset multiple contracts between a counterparty and the CCP so that exposures are limited to the netted amounts. Novation and netting agreements are in the first instance stipulated by the CCPs and agreed to by members using the CCP. But this is not

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<sup>30</sup> This depends on the degree of convergence to standardized products and/or CCPs' solving the problem of closing out similar but not identical offsetting contracts.

<sup>31</sup> While DPCs are structured to be market neutral their parents are not and hence view price and order flow as valuable proprietary information.

sufficient. Both need to be legally enforceable in the relevant jurisdiction(s). The section below shows that there has been considerable convergence of laws protecting clearing arrangements from bankruptcy effects in the US, with latest legal developments in 2005, and in the EU with harmonised regime since 1998. CCP's powers and arrangements in case of member default are comparable across jurisdictions. An area where there may be still a few differences is that impact of a member's bankruptcy on the powers of the CCP operator to dispose of assets of the insolvent member.

## 5.1 Defining novation

Novation is a means of discharging a debt. A new contract is substituted for an existing contract, between either the same parties or different parties, the consideration usually being the discharge of the old contract.<sup>1</sup> Thus, with novation, a new legal basis is created for contractual rights and obligations. Novation requires a binding contract and intention to enter into a novation. If the latter is absent, there are two contracts. Consent of parties may be inferred from conduct without express words. Consideration for executory contracts on both sides which contain a promise for the future is found in the mutual surrender of rights to performance and the consideration for the contract between the remaining original party and the new party lies in the mutual exchange of promises.

## 5.2 An historical background to novation

Novation is as old as law itself and serves modern capital markets. Under Roman law<sup>2</sup>, novation was the only possible way to assign an obligation to a third party or to change an existing obligation. Similarly, in the "Institutions" issued by Justinian in the 6th century, novation was a way of discharging an obligation. Continuing the legal tradition, the rules accepted novation only if there was an explicit consent of the parties.<sup>3</sup> The French Civil Code of 1804 (*Code Napoléonien*) provided in Article L.1278 that security interests and *in rem*

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<sup>1</sup> Halsbury's Laws of England, Chapter 8, Discharge of contractual promises.

<sup>2</sup> Gaius (c. 130-180), Institutes, Part III, section 176: "*Novatio est veteris obligationis in novam translatio et transfusio*".

<sup>3</sup> The Institutes of Justinian is one of the three parts of the Corpus Juris Civilis issued in Latin (527-565) by emperor Justinian and had binding force. Book III, title XXIX, foresees: "*ideo nostra processit constitutio, quae apertissime definivit, tunc solum fieri novationem, quotiens hoc ipsum inter contrahentes expressum fuerit quod propter novationem prioris obligationis convenerunt; alioquin manere et pristinam obligationem et secundam ei accedere, ut maneat ex utraque causa obligatio secundum nostrae constitutionis...*" Translated into English by J.B. Moyle (1913) 5th edition, Oxford University Press, it provides that: "We therefore issued our constitution, enacting most clearly that no novation shall take place unless the contracting parties expressly state their intention to be the extinction of the prior obligation, and that in default of such statement, the first obligation shall subsist, and have the second also added to it: the result being two obligations resting each on its own independent ground as is prescribed by the constitution..."

rights are extinguished with the original debt, unless the creditor has expressly specified otherwise.

In its decision of 21 September 1883<sup>4</sup> the *Reichsgericht*, the supreme civil court in 19th century Germany, developed a theory of novation in connection with contractual security interests. The court recognised that under novation a new contract arises; therefore, security interests created and performed in the form of a pledge or guarantee in connection with the initial contract are also terminated together with the initial contract. In case of doubt, the case law in Germany adjudicated in favour of a simple change of the initial contract unless – and this was the new element which is important for this discussion – the intention of the parties, the “*animus novandi*”, was explicit.

Novation was widely used as a common law to assign a contractual right. Traditional examples of novation were circular debts where A is indebted to B, C is indebted to A, and parties agree that C will perform to B. Usual examples of novation are with service contracts, retirement from a partnership or supply of goods. In English law, contractual rights, but not obligations, may be assigned without the consent of the debtor. By contrast to assignment, novation requires the consent of all parties for a new contract to be substituted for an existing contract, in which case the latter is discharged. Novation is also distinguished from a mere change of the content of a contract.<sup>5</sup> From this long tradition, we deduce that clearing agreements and constituting by-laws of CCPs have to expressly provide for novation to be effective.

### **5.3 Alternatives to novation**

In certain markets (e.g. Eurex Clearing AG<sup>6</sup>) or for certain instruments (e.g. equity clearing)<sup>7</sup> the CCP does not substitute parties in an existing contract. Instead, the CCP is the party to any contract concluded on an exchange. Legally, the CCP makes an open offer to eligible clearing members following which two contracts are immediately concluded as soon as the parties have agreed on the details of the trade during the process of “matching”. The open offer has a binding character on the CCP so that a contract between each trading participant and the CCP is concluded and the CCP cannot reject these contracts. In the open offer system, there is no bilateral contract between trading participants and therefore no obligations ever arise between the trading participants. Should for any reason the CCP not become party to the contract with

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<sup>4</sup> RGZ 10, 53.

<sup>5</sup> See Schuldänderung, Änderungsvertrag.

<sup>6</sup> See clearing conditions for Eurex Clearing AG, 1.2.1 (1) dated 24 October 2005 [www.eurex.com](http://www.eurex.com).

<sup>7</sup> See London Clearing House, General Regulations (September 2005), Regulation 62 (c), [www.lch.com](http://www.lch.com).

each trading partner, there is no contract. If for any reason novation is not recognised by the courts, the original bilateral contract revives, which exposes the parties to each other's credit risk and overturns the premises for risk management and capital adequacy purposes.

Guarantee schemes spread risk among members without the assumption of obligations and rights by a central counterparty as is the case with novation and open offer. We are of the view that novation/open offer is more effective from a risk management point because it enables the CCP to transfer or assume contracts and alter positions to avoid spill over effects at the failure of a large participant. The guarantee scheme does not provide for the management of a nexus of contracts. Here are the main costs and benefits:

From the perspective of the guarantee scheme, the organiser of the scheme has following benefits:

- (i) It has no exposure to the defaulter;
- (ii) It provides some degree of protection against counterparty credit losses up to the limit specified by the organiser.

The costs of such schemes are:

- (i) there is no legally binding transfer of contracts, rights and obligations to a central entity which assumes responsibilities;
- (ii) there is no common basis as each guarantee scheme has its own details by contrast with multilateral netting;
- (iii) the synergies of extensive multilateral netting found in a CCP do not apply;
- (iv) vis-à-vis a CCP, in times of distress the organiser does not manage the default. There is no central capability of cancelling the defaulting members positions, transferring them to another member, or entering into offsetting contracts to facilitate closing of positions;
- (v) The initial counterparties remain responsible for the contracts into which they have entered and thus each party bears its counterparty's credit risk. Parties cannot effectively close-out their positions except by agreement with their original counter-party.

Therefore, we focus in this paper on novation and open offer.

#### 5.4 Current legal status of novation

Nowadays, novation is a concept explicitly foreseen in current legal acts<sup>8</sup>. In the CCP context this is a legal technique to achieve that a CCP substitutes existing contracting parties in already existing contracts between a buyer and seller of exchange-traded contracts or for OTC trades.

In the CCP context, an existing bilateral contract between two trading parties is replaced by two contracts, one for each trading partner, with the CCP. In case of discrepancy, the details communicated to the CCP will prevail over those of the initial trade at the exchange. That is necessary because the CCP will have to take certain actions to alter fundamentally the contract in case of delays, default or shortage of underlying deliverables. The fact that the CCP is the counterparty to all trades allows it a great degree of flexibility and discretion in disposing of the content of the contracts along the lines of its by-laws and membership agreements by means of: assignments of delivery obligations to other clearing members than the original ones, suspension of settlement obligations in case there is a temporary shortage of underlying securities, substitution of delivery obligations by payment obligations in case of permanent shortages and fixing of cash settlement obligations etc.

There is no legal difference between the novation performed by a CCP for exchange traded and for OTC derivatives. The only difference can be seen in the role that the CCP plays: a mandatory role for CCPs in most exchange traded derivatives while for OTC derivatives parties voluntarily submit their trades to clearing. For that matter, CCPs select the most commonly used contracts which by definition do not have long maturities and are traded on commonly used currencies. Selection criteria of OTC contracts subject to clearing are a condition for eligibility of contract registered with the CCP.

There are several issues to consider when drafting the CCP's rules in respect of novation, we will focus on two. First, the rules must be designed in such a way so that there is certainty regarding the point in time when novation is concluded because if for some reason novation is invalid, the original contract may not be extinguished, which means that each counterparty is exposed to each other's credit and liquidity risk, which is a highly undesirable result for both

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<sup>8</sup> See e.g. the concepts of "Schuldumschaffung" und "Schuldneuschaffung" based on German Civil Code (BGB) section 364 §2; 7 U.S.C. § 1a (9) (A) (i); for French and Belgian law Code Civil Article L.1271-1281; in Switzerland Articles OR 116-117; Articles 436-439 Greek Civil Code.



counterparties and the exchange. In some rules, CCPs may determine that certain transactions will not give rise to novation.<sup>9</sup>

Second, security rights (contractual or *in rem*) will be extinguished when the new contract is concluded.<sup>10</sup> They follow the new contract if the guarantor or the owner of the pledged item has consented. If security interests were concluded between the original parties, these will be extinguished unless the parties specify that they will be transferred to the clearing house. On the contrary, with open offer there is no such risk because the contract is directly concluded with the clearing house. In any case, the risk is theoretical also for novation because margin, collateral and other security rights will usually be posted to the clearing house immediately after trading. If, for OTC derivatives, parties concluded a Credit Support Annex, this security interest will have to be expressly transferred to the clearing house together with the initial contract if novation applies, otherwise it will be extinguished. In an open offer system, security rights are immediately concluded between the CCP and each of the trading counterparties.

## **5.5 The economic benefits and costs of CCP novation**

Novation (as well as open offer) offered by a CCP has economic benefits and costs which may be summarized as follows:

- Novation helps the particular way of settling derivative contracts because their settlement does not, in principle, aim to transfer a right in a security or commodity. In general, derivative contracts may be cash settled by paying an amount or they may set-off by another derivative contract with an opposite position which cancels out the first one. In bilateral netting, if a counterparty defaults, the performing party has an unsecured claim against it. If an OTC trade is cleared and novated by a clearing house, credit and liquidity risk of the counterparty is replaced by the credit and liquidity risk against the CCP which must have robust financial resources. In addition, the CCP is entitled by its rules to take measures to avoid non-performance (by altering the derivative contract or assigning it to another member) which a market participant cannot undertake in bilateral netting. In that regard, any residual risks are a) managed by the CCP and b) spread among clearing members (who contribute to the clearing fund) and CCP (it is responsible with its capital to the extent that members do not contribute to it).

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<sup>9</sup> According to rule 1.3.5.9 of 18 July 2005, LCH.Clearnet SA may determine that certain transactions on securities which are to be registered in the clearing system will not give rise to novation. For those, Clearnet SA will only send delivery instructions to the requisite central securities depository or settlement system.

In general, the cost and benefits of CCP services are:

- Fungibility of contracts is ensured if contracts can be cleared through the same clearing house. This ensures that contracts are better managed, either by entering in contracts in other markets and closing-out or by having a single pool of collateral and margin for positions in different markets which are grouped in one risk calculation.
- Network effects: the more transactions cleared the better for netting efficiencies.
- Economies of scale: the large operating costs of a CCP are the same whether the CCP clears a limited or a larger volume of transactions. Thus, one would argue that the more transactions cleared, the less the clearing fees will be. Some evidence is provided by DTCC, which cannot be as such transferred to apply to European clearing houses<sup>11</sup> (van Cayseele, 2004a).
- Switching costs: Members invest in technology to connect to a CCP and will not be inclined to invest in multiple technologies to connect to more.
- Multiple CCPs serving the same market: need to open accounts with each other and assume credit risk vis-à-vis each other.

## **5.6 Protection of novation/open offer, netting, margin and settlement**

In the United States, a derivatives clearing organisation (the “DCO”) has to register with the CFTC. From that moment, all DCOs are subject to the same legal regime. Clearing agencies registered with the SEC comprise clearing corporations which act as intermediaries in making payments or deliveries or both in connection with securities transactions or compare data for the settlement of securities transactions or reduce the number of settlements or allocate settlement responsibilities.<sup>12</sup> Clearing corporations which clear “security futures products” that have the characteristics of both futures and securities have to register with both the CFTC and the SEC. The two regulatory authorities exchange information on proceedings and cases against any clearing agency.<sup>13</sup> The following issues are protected statutorily<sup>14</sup>: the enforceability of contractual rights to liquidate, terminate or accelerate a commodities

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<sup>10</sup> Palandt, BGB, 2002, §311 RdNr. 8 and 10.

<sup>11</sup> European Commission’s press release dated 7 March 2006 envisages commissioning a study of clearing and settlement pricing, [www.europa.eu.int](http://www.europa.eu.int).

<sup>12</sup> Section 3(1) (23) (A) of the Exchange Act (15 U.S.C. 78c(a) (23) (A)) and Section 17A of the Exchange Act (15 U.S.C. 78q-1).

<sup>13</sup> 15 U.S.C. 78q (c).

contract, a forward contract or a repurchase agreement; cross margin and netting in rules and by-laws of derivatives clearing organisations approved by the Commodity Futures Trading Commission; as well as the enforceability of clearing organization netting contracts. The protection has been extended from the financial institutions which were already covered to financial participants subject to the same conditions as financial institutions, including clearing organizations.

In the EU, apart from the authorisation by the relevant competent authority, a national authority may decide to designate a clearinghouse or a CCP and notify the European Commission as foreseen in the so-called Settlement Finality Directive<sup>15</sup> (SFD). The national authority depends on the national legislation and may be a central bank, a securities regulator, the banking supervisor or the ministry of finance. The SFD defines a CCP as an entity that interposes between the institutions in a system and which acts as the exclusive counterparty of these institutions with regard to their transfer orders. Clearing house is an entity responsible for the calculation of net positions of institutions, a CCP and/or a settlement agent.

By contrast to what is generally believed that a CCP merely sends instructions for payments, securities or commodities deliveries to a payment or settlement system, cash-settled derivatives are settled by means of the CCP's debiting and crediting of member accounts maintained on the CCP's books. In the event of a bankruptcy filing of a market participant, the settlement instructions involving that participant that are passed on to a settlement system will be considered final so long as the relevant operators are unaware of the opening of insolvency proceedings. Currently, netting that takes place in the CCP is protected by the effects of bankruptcy under the national law which governs the CCP.<sup>16</sup> The reason is that the margin is calculated on the basis of net sums for each category of contracts. As a result, netting, and collateral or margin have to be exempt from the operation of bankruptcy rules (carve-out).<sup>17</sup>

In that regard, it is debated whether a CCP should be designated under the Settlement Finality Directive (SFD) to protect it from bankruptcy effects. It is noteworthy that the directive does not foresee an express consideration of clearing systems as a specific category of systems.

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<sup>14</sup> The Bankruptcy Abuse Prevention and Consumer Protection Act of 2005 (BAPCA) whose provisions discussed here entered into force on 17 October 2005 (S. 256); see in particular amended sections 556, 559, 560 and 561.

<sup>15</sup> Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems OJ L 166, 11.6. 1998, p. 45.

<sup>16</sup> In Germany by law §§ 94-96, §104 and §147 *Insolvenzordnung* (InsO).

<sup>17</sup> The Group of Thirty (2005) noted that legal deficiencies persist in the 15 jurisdictions it reviewed and urged the adoption of an international standard by intergovernmental organisations (see Recommendations 14 and 16).

Consequently, to the extent that CCPs have been notified by member states under the directive, they have been designated as securities settlement systems, with so far untested legal consequences. If a clearinghouse or a CCP is a “designated system” under the SFD it can be beneficial for its risk management procedures for the following reasons:

- a) Bilateral or multilateral netting that takes place (as well as any transfer order entered into a clearing house) will be protected in the event of insolvency of a participant. (Article 3 of the SFD). Thus, the system operator may rely on netted sums for the risk management measures it takes and for the amount of collateral it requires.
- b) Funds and securities available under Article 4 will be used to fulfil the participant’s obligations in the CCP on the day of the opening of the insolvency proceedings. A credit facility may be used against existing collateral to cover the participant’s obligations to the system. Thus, the system operator may rely on collateral arrangements for the risk mitigation measures it takes.
- c) Designation is an indication that competent authorities are satisfied as to the adequacy of the system’s rules, the choice of the governing law and the nature of participants to the CCP.
- d) There is cross-border protection and reliance in the EU (and the EEA) for systems designated and notified to the Commission.

Notwithstanding the above discussion, it should be noted that the protection of collateral and close-out netting provisions does not need such a designation because the Financial Collateral Directive<sup>18</sup> (FCD) protects collateral arrangements with clearing houses and central counterparties even if they are not designated systems under the SFD, provided that they are regulated entities. In particular, the FCD applies to collateral takers and collateral providers which “are a central counterparty, settlement agent or clearing house, as defined in the SFD, including similar institutions regulated under national law acting in the futures, options and derivatives markets to the extent not covered by that [settlement finality] Directive...”. The protection of collateral arrangements is provided if collateral takes the form of cash or financial instruments and is in writing, which is the case with clearing houses and CCPs. According to the FCD, book-entry securities provided as collateral are subject to the law of the country in which the relevant account is maintained. Provisions related to the zero-hour rule and suspect period are dis-applied for financial collateral. Collateral arrangements are protected from insolvency proceedings even for partnerships and other persons, other than

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<sup>18</sup> Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on financial collateral arrangements, OJ L 168, 27.6.2002, p. 46.

natural persons, which transact with a clearing house or a CCP. Therefore, while multilateral netting and any transfer orders are protected under the SFD, collateral, margin and close-out netting are protected under the FCD. In the future revisions, the scope of the SFD should be expanded to explicitly cover clearing systems as well. There should be a harmonised framework for novation/open offer to allow these to benefit from existing carve-outs from bankruptcy effects EU-wide.

CCPs are more comfortable taking margin deposited usually in the jurisdiction where the CCP has its establishment and which (usually) governs the system. Depositing margin in different jurisdictions increases conflicts of law and may make the realisation of margin cumbersome, costly or impossible.

National insolvency laws determine the range of actions of a CCP after the opening of insolvency. Carve-outs protect novation, open offer, netting and margin. The carve-outs usually exist if transfer orders and netting have been entered into a system whose operation cannot be disturbed by the insolvency administrator. However, the fate of dispositions of securities after netting is subject to the national insolvency law, which is not harmonised and varies across Member States in the EU. This has repercussions for the CCP's actions after netting because the CCP may not act without permission of the insolvency administrator, who decides on the fate of assets after netting. Although all this is legally sound in novation, if the market in the meantime moves, the counterparties may be exposed to market risk. Further exemptions from the bankruptcy rules can only be provided for by national legislation.

With multiple members from different countries, conflicts of law arise which the CCP has to monitor and ensure, with a great degree of assurance, that its operations are not jeopardized by different laws: be it the law where the collateral is located, the law of the trade, the law of the incorporation of the member, the law of the country where the CCP is if that is different from the CCP's governing law. All these jurisdictions must support any transfer orders entered, netting, margin, novation or open offer, and finality achieved at the CCP through carve outs in their bankruptcy law. CCPs should avoid adding layers of conflicts of law by limiting their operations (both contractual and proprietary aspects) to a single governing law. Even when the application of more than one law may not jeopardize the operation of the CCP, the different nature and treatment that each jurisdiction accords to rights in book entry securities complicates or makes obscure the nature of the rights of final investors. In some instances it will be unavoidable.

As regards settlement of futures contracts, there is not necessarily a transfer of a security, cash or commodity because the CCP may set off derivative contracts with long and short positions, in which case a transfer of payment or securities/commodities is not necessary. Furthermore,

for cash and physically settled futures, settlement may result in transferring orders for payments or security/commodities deliveries which will be entered by the CCP into the respective payment or settlement system. The rules of that payment/settlement system will determine the finality of those transfers and the point in time after which the CCP has discharged its obligations towards its direct members. Based on the SFD, the clearing house's rules shall define the moment of entry, for which national legislation may lay down conditions (Article 3 of the SFD), and the moment of irrevocability (Article 5). It is advisable that the rules of the clearing house provide a precise definition of finality for various actions to achieve greater certainty in case of bankruptcy of a CCP or a member.<sup>19</sup> For the same reasons, novation should also be final and protected from the effects of bankruptcy of the original counterparties in all relevant jurisdictions for the operation of the CCP to be effective. The clearing house may effect settlements of netted amounts between itself and its clearing members or between itself and the non-clearing members. Since these rules are based on contractually agreed terms any changes should be subject to open consultation with the affected members; in particular, if there are partial settlements, at the level of the CCP, which the clearing and non-clearing member need to allocate to each client's transactions.

## **5.7 Members' obligations**

Member's obligations derive from legislation and the CCP membership (contractual) rules. Participants in clearing houses must meet initial financial requirements and continue to meet financial responsibilities, expertise and operational capabilities. Depending on the agreements signed, clearing members may clear on their behalf, on behalf of their customers, or on behalf of other non-clearing members.

Clearing members act as principals in relation to contracts registered in their name with the CCP. Therefore: a) The CCP has no obligations vis-à-vis the customers of the clearing member;<sup>20</sup> b) in order to ensure that clients are subject to the exchange/clearing house rules, the contracts between clearing members and their clients reflect the rules of the exchange and the clearing house and that the clearing house is not obligated to make a payment to a client if the clearing member were to default. General clearing members are allowed to clear their own trades, their customers' as well as trades of exchange participants' which are not clearing members (non-clearing members). Direct clearing members clear their own trades and those of their clients as well as trades of their group affiliates. Those non-clearing members may clear through more clearing members but they are allowed to use one and the same clearing

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<sup>19</sup> Windsor Declaration of May 1995.

<sup>20</sup> CME Rule 803.

member per market. Non-clearing members and end-investors do not have any contractual relationship with the CCP. Giving up agreements allows non-clearing members to transfer a trade to another clearing member than the one they have the contractual relationship with.

The clearing chain is complex and characterised by many levels of intermediation. Clearing members have contracts with the CCP. Non-clearing members have no contractual relation with the CCP. Their only contractual relationship is with the respective clearing member. Members are in principle responsible for the settlement and for keeping accounting and technical and human expertise to ensure proper settlement for their customers. The above reveals a multi-tiered structure which is reminiscent of the settlement process.

In most cases, the relationship between clearing member and client is regarded as principal to principal but in other cases it is characterised as (disclosed or undisclosed) agency.<sup>21</sup> This matter should be clarified by means by law or in the clearing house rules in order to achieve legal certainty that the clearing member would be obligated to make a payment to a client if the clearing house were to default.

A recent failure in the United States demonstrated the importance of segregation requirements for the protection of client assets.<sup>22</sup> Laws and clearing house regulations require that futures commission merchants are required to segregate client assets and positions from proprietary assets and positions in the aggregate without identifying specific ownership of the deposits.<sup>23</sup> The US Bankruptcy Code dealing with the bankruptcy of a commodity broker – including futures commission merchants and clearing organisations – is designed to provide greater protection to customers than those generally applied to unsecured creditors. Those provisions protect the operation of margin and liquidation of commodity contracts from the avoidance powers of a bankruptcy trustee. The trustee has the authority to dispose of customer accounts and property. The trustee has broad authority to close out positions, make payments, and make or accept delivery on open contracts and to distribute customer funds pro rata to the broker's customers whether or not these are specifically identifiable.<sup>24</sup> Thus, positions and assets deposited by non-defaulting clients are potentially at risk in the event of default of another client. Moreover, since the CCP may liquidate all customer positions, the CCP may

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<sup>21</sup> The CPSS has cautioned that the nature of the tiered legal relationship between clearing members and their clients is not always clear or it has not been legally tested before the courts in many jurisdictions.

<sup>22</sup> Refco Inc. filed for chapter 11 bankruptcy protection on 17 October 2005. The filing did not include subsidiary Refco LL.C., the futures commission merchant registered with the CFTC which was also a clearing member in clearing houses; CFTC release 5133-05 19 October 2005.

<sup>23</sup> Section 4d of the Commodity Exchange Act and 17 CFR Part 1 §§1.20-1.30, 1.32, 1.36.

<sup>24</sup> 11 U.S.C. §766(h) and (i).

liquidate positions of non-defaulting clients.<sup>25</sup> By CFTC regulations, futures commission merchants are prohibited from guaranteeing losses of their clients. This aggregation within segregated accounts in combination with the distribution powers of the bankruptcy trustee potentially results in clients' guaranteeing each other positions at the CCP level with the consequence that each client carries to some extent the credit and liquidity risk of the other (unknown) clients of the same clearing member.<sup>26</sup> Since 1995, the Windsor Declaration has prioritised the development of best practices with regard to the handling of customer positions, funds and assets held in omnibus accounts at markets in the event of a default. However, there has been little progress at the cross-border level.

In cash-settled derivatives, there is a payment to be made. Margin has been posted prior to entering into trading. There is no entitlement in securities or commodities, if the non-clearing member goes bust, the client will have an unsecured claim against the non-clearing member for a payment. EU legislation requires investment firms to make arrangements to safeguard clients' rights in financial instruments and to prevent use for own account unless the client consents in writing (MiFID Article 13(7)).

Similar requirements apply as regards funds, with two exceptions: a) a client may not consent to the use of its cash by the investment firm (MiFID Article 13(8)); b) banks are exempt from this prohibition because this is the nature of the banking business under the Banking Directive<sup>27</sup>. Thus, there is a difference in treatment between a bank and a non-bank investment firm for cash: it is thinkable that the client may lose part of margin and collateral posted in the form of cash with a bank.

CCP rules foresee that clearing members must be regulated entities subject to supervision and oversight which in addition meet all or most of the following conditions:

- (i) are regulated entities licensed as clearing members;
- (ii) contribute an initial fee and an annual fee to the CCP;
- (iii) contribute to the clearing fund as adjusted periodically (often quarterly);
- (iv) keep accounts with central banks;
- (v) maintenance of minimum financial and capital adequacy requirements.

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<sup>25</sup> See e.g. CME Rule 402.B. "...to ensure the integrity of the Exchange contracts or to ensure an orderly and liquid market".

<sup>26</sup> 17 CFR Part 190 and US Bankruptcy Code 11 U.S.C. 362, 546, 548, 556, and 761–766.

<sup>27</sup> Directive 2000/12/EC, OJ L 126, 26.5.2000, p. 1.



Finally, CCPs are subject to capital requirements (regardless of whether they are banks or not) to ensure continuity of operation – at a minimum - in case of the default of the member with the largest exposure (CPSS-IOSCO CCP standard 5). Stress testing should address the market risk in case of the simultaneous default of a few members with large exposures.

For the above to work, it has to be underpinned by a combination of requirements for keeping assets and providing deposits for third parties based on legislation as well as contractual requirements in the CCP's rules. That is necessary because clearing members are entrusted with administering funds and contracts of third parties, who are usually their clients and non-clearing members of the exchange.

To safeguard third parties' rights under the contracts, clearing members must hold at all times robust financial resources, expertise and administration and put in place governance arrangements, double-entry accounting and segregation of customer assets and in general maintain the highest standards of governance for listed companies in their jurisdiction to avoid conflict of interests (see also Article 13 (3) MiFID).

## **5.8 CCP's actions in case of a member's default<sup>28</sup>**

Appropriate law making has to create a safety net that supports the rules of a CCP which allow the CCP to exercise a wide range of actions to ensure an orderly market, a concept common in the United States and the EU.<sup>29</sup> It is necessary that powers of the administrator are limited in relation to liquidating positions and protecting initial, variation or maintenance margin.

Prior to default, CCPs may establish position limits per member or call for an additional margin from a member whose capitalisation the clearing house judges as inadequate for the positions this member maintains.

After a failure occurs, CCPs may engage in several actions that may differ from CCP to CCP depending on the legal environment.

- For derivatives requiring physical delivery (non-cash-settled contracts), if the CCP is unable to deliver a security pursuant to market conditions the CCP can change the obligation to a cash payment by notifying the clearing member. The CCP covers physical delivery under deliverable derivative contracts.

- If there is a default: the CCP may register new transactions of the defaulter only if they reduce risks; it may buy or borrow securities by means of securities lending or sell securities

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<sup>28</sup> For considerations relating to a CCP default, see section 2.

for the account of the clearing member to secure compliance with the settlement obligations of the clearing member. After the opening of insolvency, legislation may only allow the free disposition of member's assets by the insolvency administrator.

In case of late deliveries of securities, the CCP will have to charge a penalty and has recourse to a borrowing and lending mechanism at the expense and risk of the defaulter if these are traded securities and:

- (i) the CCP may ask the buyer to accept partial delivery and charge him with the costs if he does not accept;
- (ii) the CCP may have to enter into a securities lending to be able to deliver the security;
- (iii) the CCP should have the freedom to go to an exchange and buy the security;
- (iv) the defaulter shall carry all costs and contractual penalties;
- (v) the CCP and the non defaulting party may claim damages incurred as a result of the delay.

Risk management measures have to ensure that the party has the securities to deliver the day before the delivery. A day prior to the delivery day the clearing members must confirm to the clearing house in writing the actual availability of the debt securities which they have notified.

The CCP may transfer (in some cases automatically) a contract to another member or a contract from another member to the defaulter.<sup>30</sup> By changing the position of the short party which is unable to perform it may result in a situation that no party has to deliver securities or that another party who can perform will do so. In the case of insolvency, the trustee's powers must be considered because these may hinder such dispositions of assets unless there are explicit carve outs for CCPs.

Finally, the authorities need to be authorised to act in case the CCP fails to act in a way commensurate to the event of default or emergency. The legal certainty will be greater in jurisdictions where the authority's actions have been tested before courts.

To avoid any legal risk, the above measures should at all times be supported (and evidenced by updated legal opinions) by the law governing the CCP, as well as any other applicable laws, in particular the law of the incorporation of the clearing members and the law governing collateral – under any definition of the “place of the relevant intermediary account” (PRIMA).

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<sup>29</sup> For instance, Exchange Rules for Eurex Deutschland and Eurex Zürich, 2.1.2.2 (7), 4.7.2.

<sup>30</sup> Recommended by the Windsor Declaration of May 1995 for failing members of futures exchanges.

## 5.9 Regulatory issues

In 2000 the CFTC and the SEC established a framework for regulation of the trading of futures on securities and futures on narrow-based security indexes. These products have features of both securities and futures. Futures on broad-based security indexes are under the exclusive jurisdiction of the CFTC. This distinction on the trading side is reflected also on the clearing house. The OCC clears futures on securities, options on commodity futures and futures and is therefore registered with both the CFTC and the SEC.

In Europe this landscape is more diverse because it is subject to national legislation and the form that a clearing house may adopt varies from country to country: a bank, a commercial entity, a division of an exchange or a public corporation - while consolidation is ongoing (see Table a). Regulatory cooperation cannot be optimal before regulatory requirements are harmonised which will allow the freedom of establishment and offering of central counterparty services in the EU.

The need for regulatory coordination<sup>31</sup> is more pronounced for links between CCPs. Regulators entrusted with oversight of clearing houses have an interest in overseeing the activities of a clearing house which provides clearing services to their respective markets either through an office in the jurisdiction or through a link to a local CCP.<sup>32</sup> With a link, a CCP opens an omnibus account to hold trades and effect daily margin settlements. The benefits are: (i) if the link permits, contracts concluded in one market may be offset by contracts concluded in another market; (ii) Margin posted is lower because positions on both markets which carry similar (correlated) risks are grouped in a single “margin class” (cross-margining). Cross-margining allows members to pool their margin for all positions on both markets and thus frees liquidity. In existing arrangements, the members of a CCP use that CCP for initial margin calculation, according to the rules of the other CCP, and for collateral management; (iii) Conflicts of law are surveyed and addressed with the CCP as a special participant. This is easier than trying to manage conflicts of law with a number of remote participants. If CCPs belong to different jurisdictions conflict of laws arise which have to be monitored and addressed because usually jurisdictions recognise and protect systems established within their boundaries from the effects of bankruptcy<sup>33</sup>.

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<sup>31</sup> The Group of Thirty (2005) noted that little progress has been made worldwide in terms of standards of regulation and oversight of cross border clearing activity becoming consistent and complementary (see Recommendation 20) save the ESCB-CESR work.

<sup>32</sup> Links are institutional, operational and legal arrangements between two CCPs that enable members of the first CCP to trade in the other CCP's market and clear through the existing arrangements with the first CCP.

<sup>33</sup> See Settlement Finality Directive, recitals (6) and (7).

In the US the central clearing of OTC derivative contracts has raised the issue of whether regulation of these contracts should be brought in line with the regulation of exchange-traded derivatives. This discussion does not arise in Europe where OTC derivatives remain largely unregulated<sup>34</sup> and the OTC/exchange distinction is not reflected in differential regulatory structures. Nonetheless the distinction between exchange traded and OTC derivatives should be kept in mind when considering appropriate regulatory treatment because of the different market structures, degrees of transparency and systemic importance. Introducing a common clearing mechanism creates opportunities for segments of professional investors by blurring the distinction between the two types of contracts which should not be underestimated.

Outsourcing of certain activities raises regulatory challenges of surveillance and enforcement. In case of outsourcing, clearing members have to demonstrate to public authorities and the clearing house that the new entity has the requisite resources and expertise to administer the outsourced activities and, according to the clearing house's rules, the clearing member shall remain responsible for all obligations towards the clearing house. The fact that the outsourcing entity remains responsible for the outsourced activities vis-à-vis the regulators does not resolve all issues. Memoranda of Understanding between competent authorities help but do not resolve enforcement issues in the jurisdiction where the outsourced activities are performed. Issues of coordination among all relevant authorities (the head office, the establishment offices and the country in which outsourced activities are performed) must be addressed prior to outsourcing being approved by the regulators.

Cash settlement and margin payments have been effected by members' bankers to commercial banks which concentrated the bulk of payments<sup>35</sup>. Ever since central bank money has gained momentum after the publication of a CPSS report which recommended the use of settlement in central bank accounts<sup>36</sup>, the importance of commercial banks as settlement agents has decreased, and settlement of payments and margins moved to the bankers' accounts held in the central bank.<sup>37</sup> Commercial banks retain their importance for settlements in foreign currencies. This development concerns the cash leg of transactions. As regards payments in foreign currencies, the CCP is exposed to foreign exchange risk caused from

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<sup>34</sup> Recital 53 of the MiFID. See also Article 38 of Draft Commission Regulation implementing Directive 2004/39/EC of 6 February 2006.

<sup>35</sup> The settlement takes place in the books of a commercial bank and constitutes a claim against a commercial bank with all related credit and liquidity risks (commercial bank money). If the settlement takes place in the books of a central bank it constitutes a claim against it (central bank money).

<sup>36</sup> The role of central bank money in payment systems, August 2003.

<sup>37</sup> Press Release 29 September 2005 [www.lchclearnet.com](http://www.lchclearnet.com).

different settlement zones of currencies in which payments have to be made. The related foreign exchange risk has to be adequately managed.

As regards the securities leg of transactions, CCPs are not required to settle in a specific settlement system. The common practice is that the CCP's rules will designate a settlement system in which members have to open accounts or it will lay down criteria for the members to choose another settlement system.

Finally, the reorganisation or winding-up of participants in a CCP has important implications for a central bank's role as payment or CCP overseer and settlement agent. Article 3 of the Settlement Finality Directive provides that transfer orders entered into a system once insolvency proceedings have been opened and carried out on the day of opening of such proceedings shall be legally enforceable and binding on third parties only if after the time of settlement the settlement agent, central counterparty or clearing house can prove that they were not aware nor should have been aware of the opening of such proceedings. Given that the central bank is often the settlement agent concerning clearing houses settling in central bank money, it is important to note that the authorities responsible for the reorganisation or winding-up of a participant in a system inform the operator of payment, clearing and settlement systems as well as the central bank<sup>38</sup> of their decision without delay so that no transfer orders are entered and settled thereafter. The Winding-up Directive for credit institutions and the Settlement Finality Directive are silent on this issue. National legislation<sup>39</sup>, to an extent, has taken into account the role of central banks so that these may exercise effectively the oversight function.

## **Conclusion**

CCPs provide an institutional structure for managing credit risk that has proven successful in exchange-traded derivatives. By mutualising credit risk CCPs provide both a broader base for absorbing losses and incentives for collective monitoring of members. Thus, CCPs are structurally better suited to minimizing and containing systemic risk than bilaterally cleared markets. Exchange traded derivatives with their CCP clearing provide greater liquidity to traders.

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<sup>38</sup> Opinion of the European Central Bank of 16 March 2004 at the request of the Belgian Ministry of Finance on certain provisions of the drafting law amending, in the field of insolvency procedures, the Law of 22 March 1993 on the legal status and supervision of credit institutions and the Law of 9 July 1975 on the supervision of insurance undertakings (CON/2004/9), in particular paragraph 6, [www.ecb.int](http://www.ecb.int).

<sup>39</sup> For instance, in Greece the court shall notify the Bank of Greece of its decision opening insolvency proceedings against a participant in a payment or settlement system without undue delay (Article 5 of Law 2789/2000 Government Gazette (FEK) 21 A). Moreover, any petition for the opening of insolvency proceedings against a participant in a payment or settlement system has to be submitted to the Bank of Greece.

Bilaterally-cleared OTC markets have also proven successful and their growth has outpaced those of exchange-traded CCP cleared markets over the last 15 years. And while one may suspect that a bilaterally-cleared market is more vulnerable to systemic risk, to date these markets have proven robust to some very severe shocks.

Nonetheless, it behoves policy-makers and market participants to think carefully about market structures, to look for potential improvements and impediments to realizing gains, and to anticipate crises rather than to react *ex post*. This is increasingly important as the growing internationalisation of derivatives markets heightens legal concerns and as structural changes to financial markets and deepening concentration increase potential risks.

Such an analysis might be organised around the following observations:

1. CCPs perform essential functions for counterparties to enter into derivative contracts. The definition of CCP should include two elements: a) the *facilitation of trading* by performing certain services to the exchange and the counterparties; and b) the *management of contracts for their entire duration*.

2. *Netting, collateral or margin, and novation or open offer that take place in a CCP have to be carved out from the effects of bankruptcy. Finality has to be defined so as to support the positive effects of novation. The EU is a useful example of cross-border recognition of arrangements and cooperation of authorities. The existing EU framework should be expanded to cover explicitly clearing systems.* CCPs should demonstrate that they have examined and addressed any conflict of laws issues. A system's rules should be agreed upon in consultation with affected members.

3. *Operators of clearing systems, as well as central banks as overseers and settlement agents must be informed of the opening of insolvency proceedings against the clearing house or a clearing member in a legally binding way.*

4. The clearing house is a *natural monopoly which offers essential facilities according to competition rules* (i) to markets and/or (ii) for financial instruments, either in a mandatory way (exchange-traded futures and other contracts) or on a voluntary basis (OTC trades). Therefore, clearing houses have to abide by antitrust rules concerning transparency of prices and fees as well as access, which can be refused on grounds of credit, liquidity, custody, foreign exchange and legal risk.

5. Clearing members are entrusted with administering funds and contracts of clients. Therefore, clearing members *must demonstrate robust financial resources and expertise during normal operations and in distress, follow accounting standards and double-entry accounting, segregation of customer margin and positions from their own at the level of the*

*CCP, and maintain the highest standard of governance arrangements for listed companies to avoid conflict of interests that may interfere with client's interests. Competent authorities should monitor compliance with all of the above standards. For this level of intermediation, harmonisation would facilitate the provision of services as well as the comparison of services rendered and respective pricing across EU countries. The aim thereby is that the provision of clearing services proves beneficial also for the end-investors.*

*6. Links between CCPs: a) lower the cost through cross-margining, if the link so permits, and, thus, may increase liquidity; and b) may be a way to manage conflict of laws issues by means of a contractual relationship with another CCP as a special participant instead of instituting separate arrangements with remote participants.*

## **Annex – Standards for CCPs**

### **A1. CPSS-IOSCO Recommendations for CCPs, 2004**

This report of 2004 gave momentum to clearing as well as central counterparties. The previous impetus was with standard 4 in the Recommendations for securities settlement systems of November 2001. The standard at the time discussed the need for a cost-benefit analysis whether the CCP makes sense in a particular market and the risk management controls.

The report of 2004 was more comprehensive and expanded in particular on legal risk, margin and default procedures, operational risk, settlement links and governance. The report devotes attention to the matter of vesting the CCP with sufficient financial resources to ensure that it meets its obligations when due even in the default of the participant carrying the largest exposure in extreme market conditions. Although the assets may come from various resources, it is important that their sum is enough to ensure the operations of the CCP. CSDs that do not assume credit risk have to cover only operational costs for several months.

### **A2. Three-pronged endeavours in the EU**

- From the angle of legislation: the European Commission's Directorate Internal Market has launched the process of identifying the needs for regulation in the field of clearing and settlement. Some provisions of the Directive on Market in Financial Instruments deal with CCPs, however, the said legal act is designed for trading and has only addressed open access to CCPs in the framework of trading. Thus, a Communication<sup>73</sup> published in 2004 laid down fields of interest for potential legislation with a view to harmonising requirements throughout the EU which could lead to the creation of a "single passport" activity of establishment and offering services in the EU similar to the ones enjoyed by EU banks and broker/dealers. This document focused in particular on competition concerns, unbundling of prices, governance and regulatory convergence. As required by the internal procedure, the Commission has elaborated an impact assessment to identify whether there is a need for such a regulation. In parallel, the Commission chairs the Clearing and Settlement Advisory and Monitoring Expert group (CESAME)<sup>74</sup> which is in the process of defining functions along the chain of clearing and settlement. The European

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<sup>73</sup> COM (2004) 312 final of 28.4.2004.

<sup>74</sup> See [http://www.europa.eu.int/comm/internal\\_market/financial-markets/clearing/cesame\\_en.htm](http://www.europa.eu.int/comm/internal_market/financial-markets/clearing/cesame_en.htm)



Parliament's response<sup>75</sup> to the Commission's initiative was not favourable to adopting legislation without evidence that existing legislation was poor. Parliament urged the Commission to use pro-actively its competition authority to stop any abuse of dominant position or anti-competitive behaviour. Parliament devoted its last words to: "... central providers of clearing ... services should take full account of the interests of all users, maximise user consultation and transparency of pricing structures and ensure zero cross-subsidy between their central services and those offered in competition with other market participants, especially custodian banks...; believes that users should pay only for the services they consume and have a clear and unfettered choice about where to purchase banking services related to their transactions..."

- From the angle of competition: First, the Commission's Directorate General Competition surveyed CCPs in the 25 EU Member States.<sup>76</sup> The report considered cases of horizontal and vertical consolidation at the examples of European groups. It concluded that the Euronext Group is a case of vertical silo through waves of horizontal consolidation. Deutsche Börse Group is the other example of vertical silo. The report noted that in many countries, as a result of legacy practices, participants have no other choice than to use the CCP (and settlement system) prescribed by the exchange in terms of ownership or exclusive contractual arrangements. As regards competition, the report noted that the Luxembourg stock exchange and Deutsche Börse Group have allowed for competition for clearing services. Second, at the absence of precedents, the Commission's DG Competition clarified in 2004 the legal basis of its authority under Article 82 of the EC Treaty prohibiting the abuse of a dominant position within the common market or in a substantial part of it. The substantial part of the common market in the case against Clearstream was Germany, the authorities found refusal of access and discriminatory pricing and used argumentation which echoed the theory of "essential facilities" (no duplication of certain services). Third, as competition issues regarding trading, clearing and settlement fall also within the scope of national authorities, the example of the UK authorities is the first one of national authorities assuming responsibility<sup>77</sup> and voicing concerns about the impact of exchange consolidation on clearing services (in

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<sup>75</sup> European Parliament resolution on clearing and settlement in the European Union (2004/2185(INI)) (the Kauppi report) [http://europa.eu.int/comm/internal\\_market/financial-markets/clearing/cesame\\_en.htm](http://europa.eu.int/comm/internal_market/financial-markets/clearing/cesame_en.htm).

<sup>76</sup> COMP/D1/2003/13, [http://europa.eu.int/comm/internal\\_market/financial-markets/clearing/cesame\\_en.htm](http://europa.eu.int/comm/internal_market/financial-markets/clearing/cesame_en.htm).

<sup>77</sup> See the U.K.'s Competition Commission press release on 1 November 2005 [http://www.competition-commission.org.uk/press\\_rel/2005/nov/pdf/68-05.pdf](http://www.competition-commission.org.uk/press_rel/2005/nov/pdf/68-05.pdf).

its wide sense) for certain securities. They requested in advance changes in the ownership structure of any possible exchange amalgamation. The authorities requested a greater influence of users and access to the clearing house's services by competitors (echoing the theory of essential facilities).

- From the angle of overseers, regulators, supervisors: Some work was conducted in 2005 by the central banks and regulators with a view to fine-tuning the CPSS-IOSCO recommendations to the EU needs. The work has fully shared the points of gravity expressed in the CPSS-IOSCO recommendations.

### **A3. CESR-CFTC Common Work Program to Facilitate Derivatives Business, 28 June 2005**

EU and US authorities gave momentum to derivatives clearing and settlement in their common work program with the objective to facilitate Trans-Atlantic derivatives business for respective financial institutions via regulatory convergence and mutual recognition of each other's rules. For that purpose, the Committee of European Securities Regulators (CESR) and the United States Commodity Futures Trading Commission (CFTC) set up a joint task force to conduct a stock taking exercise of availability and clarity concerning market information and facts related to clearing and settlement procedures. Subsequently, clearing and settlement rules will be part of a broader template providing guidance for players and end-users in the derivatives business. Finally, the task force will review clearing and settlement arrangements to determine their similarities and differences in order to allow for substituted compliance, reliance or recognition-like procedures that could be used by the US and EU regulators.

Market participants responding to a public consultation suggested to the task force to consider (i) impediments to remote membership and direct clearing membership; (ii) promoting local clearing; and (iii) addressing differences between European and US practices concerning clearing.

### **A4. Financial stability standards for Central Counterparties, Reserve Bank of Australia, 2003**

The Reserve Bank of Australia elaborated a set of ten standards for central counterparties in its capacity as the guardian of financial stability. The standards apply to clearing and settlement licensees that operate a central counterparty and are required to conduct its affairs in a prudent manner. The rules and the related guidance follow the spirit of other international standards. The rules focus on clarity regarding the point in the clearing process during which novation is effected. They require finality so as to ensure that CCP's settlement obligations are irrevocably fulfilled at settlement. Risk control measures in their combination must provide sufficient coverage and liquidity. CCPs must be able to collect and calculate initial

and variation margins. In comparison with the CPSS-IOSCO standards, the rules do not provide explicitly for efficiency, transparency and requirements concerning links between CCPs.

## Tables - Derivatives and OTC Central Counterparties

### a. Organisational information on CCPs in the European Union

Member State	CCP	Corporate form	Ownership structure	Instruments and products cleared
Austria	Central Counterparty Austria GmbH (CCP.A) <sup>78</sup>	Commercial entity	50% Wiener Börse, 50% Oesterreichische Kontrollbank (the settlement bank)	Derivatives and securities
Belgium	LCH.Clearnet S.A., a subsidiary of LCH.Clearnet Group	Bank	See France	See France
Denmark	Stockholmsbörsen AB <sup>79</sup>	Commercial entity	Group owned. See Sweden	Derivatives
Finland	Stockholmsbörsen AB <sup>80</sup>	Commercial entity	Group owned. See Sweden	See Sweden
France	LCH.Clearnet S.A., (Banque Centrale de Compensation) a subsidiary of LCH.Clearnet Group	Bank authorised by the "Comité des Etablissements de Crédit et des Entreprises d'Investissement" with their ongoing supervision	Subsidiary of Euronext. Branches in Belgium and Amsterdam. LCH.Clearnet Group is owned: 45.1% by exchanges; 45.1% by former members of LCH; and 9.8% by Euroclear. Of the 45.1% owned by exchanges, Euronext owns 41.5%, but its voting rights are limited to 24.9%.	Equities and bonds; warrants; exchange traded derivatives; swaps; commodity and energy; interest rate & commodity futures and options; equity & index futures & options; OTC-traded bonds and repos

<sup>78</sup> Operational as of 1.1.2005.

<sup>79</sup> Operational as of 2.1.2006

<sup>80</sup> Operational as of 1.1.2005.

Member State	CCP	Corporate form	Ownership structure	Instruments and products cleared
		being performed by the "Commission Bancaire". Its rules have to be approved by the Autorité des Marchés Financiers (AMF).		
Germany	EUREX Clearing AG  Clearing Bank Hannover	Bank <sup>81</sup> supervised by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin)  Commercial entity	Stock corporation, 100% affiliate of Eurex Frankfurt AG, an 100% affiliate of Eurex Zurich AG, which owned in equal parts by Deutsche Börse AG and the SWX Swiss Exchange	Equities, derivatives, repos and bonds OTC options and futures corresponding to those contracts admitted for trading on Eurex Deutschland and Eurex Zurich  Agricultural and energy products
Greece	ADECH	Commercial entity	A 99%-subsidiary of Hellenic Exchanges which is owned by local banks, foreign and local investors	Derivatives and repos
Hungary	KELER	Public limited company	Owned by Magyar Nemzeti Bank (53.33%), Budapesti Stock Exchange (26.67%) and the	Derivatives, spot markets, OTC

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<sup>81</sup> As of 24.5.2005.

<b>Member State</b>	<b>CCP</b>	<b>Corporate form</b>	<b>Ownership structure</b>	<b>Instruments and products cleared</b>
			Budapest Commodity Exchange (20%)	
Ireland <sup>82</sup>	EUREX Clearing AG	See Germany	See Germany	Irish securities and Exchange Traded Funds (ETFs)
Italy	Cassa di Compensazione e Garanzia (CC&G)	Commercial entity	Since 2000 the Italian Stock Exchange has the majority with 86%	Exchange-traded derivatives and equities since 2003
Netherlands	LCH.Clearnet S.A., a subsidiary of LCH.Clearnet Group	Bank	See France	See France
Portugal	LCH.Clearnet SA	Bank	See France	See France
Spain	MEFF	Commercial entity, division of MEFF Exchange	Group-owned by MEFF-AIAF-SENAF Holding de Mercados Financieros	Exchange traded derivatives; OTC trades
Sweden	Stockholmsbörsen AB	Commercial entity	Group-owned by OMHEX Group	Derivatives; OTC fixed income products
United Kingdom	LCH.Clearnet Ltd; founded in 1888 as The London Produce Clearing House, Limited	Commercial entity. Recognised Clearing House (RCH) supervised by the FSA under the UK's Financial Services and Market Act 2000 (FSMA).	Group-owned, a subsidiary of LCH.Clearnet Group.	Equities, derivatives, repos and swaps

<sup>82</sup> As of 5 December 2005 see <http://www.ise.ie/index.asp?locID=445&docID=383>.

**b. Organisational information of derivatives clearing organisation in the U.S.**

<b>CCP</b>	<b>Corporate form</b>	<b>Ownership structure</b>	<b>Instruments and products cleared</b>
AE Clearinghouse, ILLC	Subsidiary of the Actuarials Exchange	Exchange owned	Cash settled OTC contracts excluded from the Commodity Exchange Act (CEA) executed on a board of trade exempted from the CEA.
The Clearing Corporation (CCorp)	Commercial entity. First founded in 1925 as the Board of Trade Clearing Corporation	Owned by its members	Euro denominated products traded on Eurex. Futures and options on futures
Chicago Board of Trade (CBOT)	As of 2005 stock company (exchange founded in 1848)	As of 2005, stock, for-profit holding company with stockholders (CBOT Holdings) and Board of Trade of the City of Chicago, Inc., a non-stock, for-profit derivatives exchange subsidiary with members (CBOT)	From 2004 to 2008, the CME provides clearing for CBOT and CME products, with the possibility of extension through the Common Clearing Link. Futures and options on futures.
CME Clearing House	Clearing division of the Chicago Mercantile Exchange Holding Inc. (CME), a Delaware corporation - founded in 1898	Exchange owned. Since 2002, CME has been (the first) publicly traded exchange in the US	CME provides clearing to CME products: futures and options related to agricultural commodities, equity index, foreign exchange, interest rate, weather, energy. With effect as of 2004, CME provides clearing for all CBOT products
Hedge Street, Inc.	Division of Hedge Street Inc. a Delaware corporation	Exchange owned. Affiliate of Hedge Street Inc.	Fully collateralised cash settled futures and options listed for trading on the market HedgeStreet Inc.
Kansas City Board of Trade Clearing Corporation	Commercial entity, wholly owned subsidiary of the Exchange Kansas City Board of Trade	Exchange owned. The exchange is member owned	Futures and options

LCH.Clearnet Ltd. (LCH)	Commercial entity, subsidiary of LCH Ltd.	See Belgium	OTC interest rate swaps and commercial energy products, financial futures and options
MGE Clearing House	Department of the Minneapolis Grain Exchange, a private company (MGE)	Exchange owned. The MGE is a non-profit, membership organization	Futures and options
New York Clearing Corporation (NYCC)	Not-for-profit-Corporation under the Laws of the State of New York founded in 1915, designated clearing organisation for the Board of Trade of the City of New York, Inc. (NYBOT). NYBOT is the only designated contract market after the merger of the Coffee, Sugar & Cocoa Exchange, Inc. (CSCE) and the New York Cotton Exchange (NYCE) was completed in 2004	Exchange owned, subsidiary of the NYBOT, a member owned exchange.	Futures and options
NYMEX Clearing House	Division of the New York Mercantile Exchange (NYMEX)	Exchange owned	OTC energy contracts, futures
The Options Clearing Corporation (OCC) (registered with both the CFTC and the SEC)	Corporation under the laws of Delaware founded in 1973	Exchange owned. It is equally owned by the American Stock Exchange, the Chicago Board Options Exchange, the International Securities Exchange, the Pacific Exchange, and the Philadelphia Stock Exchange.	Equity derivatives, securities options. Security futures Commodity futures and options on commodity futures



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