

## Standards of Risk Management Controls used by Central Counterparty Clearing Houses

General description of area of risk and objective of controls used to limit that risk	Standards for risk controls
<b>A) Counterparty risk</b>	
<p>1. <b>Clearing membership<sup>1</sup> requirements :</b></p> <p>the clearing house should establish appropriately robust membership requirements, as a first line risk protection – its primary exposure is to (clearing) member default.</p>	<p>The membership requirements should include :</p> <p>a) capital requirements :</p> <ul style="list-style-type: none"> <li>- minimum levels (with a definition of eligible capital which should follow well-established regulatory definitions) that must be complied with at all times, together with a reporting requirement under which the member is obliged to supply confirmation of continued compliance and to notify the clearing house of non-compliance ;</li> </ul> <p>b) other requirements linked to members' capital :</p> <ul style="list-style-type: none"> <li>- additional requirements if exposures of a member to the clearing house are disproportionately large relative to its (the member's) capital<sup>2</sup> ;</li> </ul> <p>c) requirement that members have all regulatory authorisations necessary for not only their clearing business but also any other activities they undertake ;</p>

<sup>1</sup> Not all European central counterparty clearing houses use the description 'clearing member' to describe the firms from whom they collect margin and through whom all the clearing transactions are channelled. Several organisations use the term 'clearing participant' rather than 'clearing member' to avoid any impression that such participants are members of a mutually-owned company or association. Equally, several organisations, although having a clearing member or clearing participant structure, extend their financial 'guarantee' to clients of those clearing members or clearing participants who are brokers (this 'end-client model' operates in Greece, Portugal, Scandinavia, Spain and, on an optional basis, in France).

The term clearing member is used in these *Standards* to cover either clearing members or clearing participants who must comply with requirements established by a central counterparty clearing house. These requirements do not extend to 'end clients'.

After first use in the text, 'clearing member' is shortened to 'member' in the interests of brevity.

<sup>2</sup> These additional requirements may take three forms : (i) a requirement on the clearing member to reduce the size of the positions causing the disproportionate exposure ; (ii) a requirement on the clearing member to increase capital to restore proportion between the size of its positions and its capital ; (iii) a requirement on the clearing member to meet additional initial margin levels or to meet other financial obligations (for example, to provide a parental guarantee to the clearing house).

This standard does not imply that clearing houses (or exchanges) need not or should not apply limits on a member's or members' positions on the basis of considerations other than their capital.

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	<ul style="list-style-type: none"> <li>d) requirement that members have banking arrangements to effect payment obligations to the clearing house: these requirements will be specific to the money settlement arrangements established by the clearing house [see section C] ;</li> <li>e) requirement that members have arrangements to effect collateral and delivery obligations (in respect of securities and/or commodities) to the clearing house ;</li> <li>f) requirement that members have adequate systems and full operational support and back-up to ensure the continuity of their various linkages with the clearing house ;</li> <li>g) requirement that members' staff have appropriate experience and training : the clearing house will be exposed to operational risk if the staff of members are not suitably experienced and qualified ; standards should be established and training offered ;</li> <li>h) requirement that directors and senior management of member firms conform to suitable standards of fitness and properness in all their business dealings<sup>3</sup>.</li> </ul>
<p><b>2. Membership evaluation and monitoring :</b></p> <p>having admitted a firm to membership, the clearing house should ensure that the firm continues to meet the membership requirements, and should evaluate and keep under review the financial health of members – so that it is in a position to take any additional steps to protect its risks and therefore the integrity of the market or markets that it clears.</p>	<p>Clearing house procedures should ensure that :</p> <ul style="list-style-type: none"> <li>a) members' adherence to the membership requirements is monitored and enforced ;</li> <li>b) there is an evaluation of the standing of each member as an aide to the monitoring of exposures by the clearing house<sup>4</sup> ;</li> <li>c) there is at least daily review of the member-specific exposures run by the</li> </ul>

<sup>3</sup> The requirement on fitness and properness is likely to mirror the requirements of the supervisors of regulated members. It is appropriate that clearing house rules should reinforce those standards, and in the case of members whose activities do not require authorisation the clearing house standards are of even more importance.

<sup>4</sup> The degree of independent evaluation that can usefully be undertaken by a clearing house will vary according to its membership base.

	<p>clearing house ;</p> <p>d) there is liaison and information-sharing with statutory regulators, as appropriate and permitted ;</p> <p>e) there are information channels with other clearing houses/exchanges, as appropriate and permitted.</p>
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<b>B) Valuation and margining</b>	
<p><b>3. Re-valuation of positions :</b></p> <p>the clearing house should ensure that positions are re-valued at least daily using the most realistic market prices and that re-valuation losses are collected expeditiously from members – so that its exposure to market risk should a member default is both accurately measured and contained.</p>	<p>Clearing house procedures should ensure that :</p> <p>a) positions registered at the clearing house are re-valued at least once each day and losses collected by the clearing house<sup>5</sup> ;</p> <p>b) there is rigorous assessment of ‘best’ market prices – with the replacement of ‘stale’ or unrepresentative prices ;</p> <p>c) in order to ensure the use of ‘best’ market prices, the clearing house has the authority to over-ride exchange closing prices, if that is appropriate.</p>
<p><b>4. Risk-based initial margin requirements :</b></p> <p>the clearing house should establish prudent initial margin requirements that measure the latent market risk of the positions held by members – so that, should a member default, the clearing house has, in all but the most extreme market circumstances, sufficient margin to cover default losses without recourse to other financial resources at its disposal</p>	<p>The initial margining used by the clearing house should comprise :</p> <p>i) a systematic model which includes option pricing and re-pricing if appropriate ;</p> <p>ii) regular re-evaluation of key parameters (assumptions) used by the model to determine margin requirements ;</p> <p>iii) parameters that cover at least large one-day price movements in all</p>

<sup>5</sup> Legal concepts and terminology vary across Europe, even when expressed in the *lingua franca* of English. Despite the differences, European central counterparty clearing houses all employ one or both of two methods of registration and re-valuation. The common starting point is that each original market contract is replaced (novated) by a contract between the clearing house and the member-seller and the clearing house and the member-buyer. After that, contracts are either re-novated each day on the basis of the new day’s settlement price - in which case there is payment in cash through the clearing house of the associated profits and losses (which in effect, of course, sum to zero) - or remain open at trade price. In British-English and legal terminology, the former contracts are described as ‘settled-to-market’ daily because the old contracts are extinguished and replaced by new ones. In our discussions it has been said that they are described as ‘marked-to-market’ in Portugal, Spain and France. This phrase is reserved in British-English and legal terminology for the second common treatment under which after original novation the contracts remain open at the traded price but are re-valued (marked-to-market each day) by the clearing house and losses collected (typically in collateral rather than cash) and profits credited (but typically not paid in cash).

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<p>(see section D).</p>	<p>contracts cleared ;</p> <ul style="list-style-type: none"><li>iv) risk-based margin offsets, if appropriate, that reflect only firmly established price inter-relationships between different contracts ;</li><li>v) at least daily re-calculation of initial margin requirements and collection of increased requirements ;</li><li>vi) procedures under which the adequacy of initial margin requirements (the outputs of the model) is regularly assessed [see also D) under stress-testing] ;</li><li>vii) procedures under which the establishment of margin parameters and requirements is determined by the executive, independent of Board or Committee involvement, and which ensure that the clearing house's decisions are taken exclusively on the basis of risk assessment rather than business growth considerations [see also section F under independence of risk management function and staff].</li></ul>
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<p><b>5. Initial margin cover :</b></p> <p>having established suitable risk-based initial margin requirements, the clearing house should ensure that members meet those requirements only with high quality collateral that is regularly re-valued and subject to prudent haircuts if appropriate, that is readily realisable by the clearing house, and whose ownership cannot be legally contested or blocked in a way which would undermine the financial integrity of the clearing house and therefore of the market or markets cleared.</p>	<p>The clearing house may accept as margin cover only :</p> <ul style="list-style-type: none"> <li>a) cash ;</li> <li>b) government debt instruments ;</li> <li>c) other high quality securities ;</li> <li>d) bank guarantees or letters of credit<sup>6</sup>.</li> </ul> <p>In all cases, the clearing house should assess issuer risk, liquidity risk, and market risk and establish appropriate :</p> <ul style="list-style-type: none"> <li>i) tests and standards of issuer quality ;</li> <li>ii) restrictions on acceptance of illiquid issues ;</li> <li>iii) limits on its holdings of certain issues ;</li> <li>iv) daily marking to market of collateral whose market value changes, accompanied by haircuts, whose continued prudence is regularly re-assessed, from current market value ;</li> <li>v) in the case of bank guarantees and letters of credit :             <ul style="list-style-type: none"> <li>- standard legal agreements to limit performance risk ;</li> <li>- minimum credit-rating standards for acceptable bank issuers ;</li> <li>- limits on the value of guarantees or letters of credit accepted from any one bank.</li> </ul> </li> </ul>
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<sup>6</sup> Guarantees and letters of credit can be important facilities for non-bank members and as such important to participation in clearing arrangements. At the same time, banks have direct membership of most clearing houses and in many countries are the dominant members. Clearing houses should therefore carefully monitor their aggregate credit exposures to individual banks, recognising banks' diverse activities as members, settlement banks, and as providers of guarantees and letters of credit and liquidity facilities.

<p><b>6. Intra-day margining/ procedures on surplus cover :</b></p> <p>the clearing house should ensure that it has procedures which ensure that the adequacy of its margin requirements is not allowed to erode excessively during the course of the day.</p>	<p>Clearing house procedures should :</p> <p>(a) include routine intra-day margin evaluation and margin calling procedures which limit excessive intra-day margin erosion<sup>7</sup>.</p>
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<p><b>C) Money settlement and custodial arrangements</b></p>	
<p><b>7. Money settlement :</b></p> <p>the clearing house should ensure that members' cash liabilities are finally settled as quickly and securely as possible, bearing in mind the currency mix of its business – so that money settlement risk is kept to a minimum.</p>	<p>Clearing house arrangements should :</p> <p>a) ensure the flow of funds between members/bankers to members and the clearing house, in either central bank money or commercial bank money<sup>8</sup>;</p> <p>b) allow additional calls to be made during the course of the day in accordance with the clearing house's intra-day margining policy ;</p> <p>c) ensure that banks' commitments to pay are irrevocable ;</p> <p>d) include confirmation checks to ensure that funds have been promptly and accurately credited and transferred ;</p> <p>e) in the case of commercial bank arrangements, ensure that participating banks are subject to suitably stringent eligibility criteria and that banks through whom flows are concentrated should be subject to both stringent eligibility criteria and regular monitoring.</p>

<sup>7</sup> It is accepted that some clearing houses prefer to avoid regular intra-day calls and accordingly establish initial margin requirements that are based on such calls being exceptional or require members to provide an additional 'guarantee' that covers the risk of new business entered into during the course of day T which is not reflected in initial margin requirements until T+1. Such arrangements need, of course, to be supplemented by routine evaluation to check that the margin or guarantee is sufficient.

<sup>8</sup> The view is that money settlement in central bank money is more secure – and is part of the design structure of several more recently established clearing houses. Implementation poses difficulties for clearing houses with multi-currency money settlement arrangements.

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<p>8. <b>Physical delivery ;</b></p> <p>the clearing house should ensure that the physical delivery of securities or commodities is effected securely.</p>	<p>Clearing house arrangements should ensure :</p> <ul style="list-style-type: none"><li>a) delivery versus payment ;</li><li>b) that members have the requisite facilities to meet their obligations to deliver securities or commodities.<sup>9</sup></li></ul>
<p>9. <b>Custody and security of cash and non-cash collateral :</b></p> <p>the clearing house should ensure that all its collateral is securely held – so that the integrity of its margining is not undermined.</p>	<p>Clearing house arrangements and procedures should ensure that :</p> <ul style="list-style-type: none"><li>a) cash is deposited only with selected banks, and subject to appropriate limits, or held in the form of their CDs, or is secured under reverse repurchase agreements ;</li><li>b) non-cash collateral is lodged with central securities depositories<sup>10</sup> or other high quality custodians ;</li><li>c) the credit-standing and arrangements of custodians are assessed regularly by the clearing house.</li></ul>

<sup>9</sup> Delivery of securities (or commodities) is in practice often effected by clients of clearing members, who maintain the requisite facilities for these purposes. Where this is the case, if the clearing member is responsible for rectifying failure or non-performance by his client, it must have the requisite facilities in order to perform its commitments to the clearing house.

<sup>10</sup> Most clearing houses lodge all their collateral with their domestic CSD, which in some cases may be part of the same group.

In the interests of clarity it is necessary to state that by central securities depositories we mean those organisations called either national central securities depositories or international central securities depositories. We note, however, that the lines are blurring as the two European ISCDs have both 'merged with' national CSDs.

<b>D) Financial resources of the clearing house</b>	
<p>10. i) <b>Resources to cover default :</b> the clearing house should maintain adequate, liquid resources to enable it to handle a default in which the initial margin requirement of the defaulter is insufficient to cover losses - so that it can ensure its ability to handle a default and protect the integrity of the market or markets that it clears.</p>	<p>The arrangements and procedures should ensure that :</p> <ul style="list-style-type: none"> <li>a) resources are fully adequate to cover the largest member default exposure<sup>11</sup> ;</li> <li>b) default exposures to all members should be regularly assessed using an appropriate stress-testing model ;</li> <li>c) resources are available immediately without legal or liquidity concerns (and supplemented as necessary by assured liquidity lines to ensure that the clearing house is able to meet its daily settlement obligations, in the event of a default, in order to remove the possibility of contagious disruption to the activities of non-defaulting members) ;</li> <li>d) front-line financial resources are supplemented by other resources, as appropriate, in order to ensure visible back-up finance in the event of depletion.</li> </ul>
<p>ii) <b>To cover non-default risk :</b> the clearing house should have sufficient resources to cover business risks other than member default – so that it can ensure its ability to continue to provide the central counterparty services to the market or markets that it clears.</p>	<p>The arrangements and procedures should ensure that :</p> <ul style="list-style-type: none"> <li>a) resources are adequate in quantity ;</li> <li>b) adequacy is regularly assessed by appropriate quantitative evaluation ;</li> <li>c) the resources are held in liquid form and prudently invested ;</li> <li>d) if the resources form part of the default backing, they are not double-counted in assessing the requirements for non-default risk.</li> </ul>

<sup>11</sup> 'Largest member default exposure' means the exposure of the member who the stress-testing results identify could produce the largest losses, in excess of initial margin, in the event of default. Both the member in question and the size of the exposure are likely to change over time.

<b>E) Default arrangements</b>	
<p>11. i) <b>Rules :</b></p> <p>the clearing house should have published rules defining acts of default and its actions in the event of default – so that its behaviour is clear and transparent to members and to other users of the market or markets that it clears.</p>	<p>The arrangements and procedures should ensure that :</p> <ul style="list-style-type: none"> <li>a) the clearing house publishes default rules, which are consistent with those for the cleared markets (if the latter rules are separate) ;</li> <li>b) the rules define both events that it will interpret as default and permissible post-default actions on its part ;</li> <li>c) its actions in a default are consistent with its rules.</li> </ul>
<p>ii) <b>Management framework :</b></p> <p>the clearing house should maintain a management guide to how a default should be handled, in order to ensure that it can act quickly and decisively to protect its risk and therefore the integrity of the market or markets that it clears.</p>	<p>The arrangements and procedures should ensure that:</p> <ul style="list-style-type: none"> <li>a) management has a written framework to guide default handling, with appropriate systems capacity to assist in quantification of risk and monitoring of the effect of close-out and transfer ;</li> <li>b) the framework is regularly updated and is as comprehensive as possible ;</li> <li>c) management responsible for default handling is fully aware of the framework and its contents ;</li> <li>d) the framework is tested as rigorously as possible at appropriate intervals.</li> </ul>

<p><b>iii) Legal protection in the event of insolvency :</b></p> <p>as the clearing house is vulnerable to legal challenge in the event of default, it should take all measures possible to reduce the risk of successful challenge to its necessary actions – so that it can ensure its ability to act decisively and quickly in the event of default in order to protect its risk and therefore the integrity of the market or markets that it clears.</p>	<p>The arrangements and procedures should ensure that :</p> <ul style="list-style-type: none"> <li>a) clearing house agreements and rules offer as much clarity and certainty as possible as to clearing house powers and obligations ;</li> <li>b) the enforceability of all netting provisions is supported by legal opinions ;</li> <li>c) the clearing house benefits from as much domestic or supra-national insolvency protection as possible<sup>12</sup> ;</li> <li>d) the clearing house’s ability to act quickly and decisively in a default, and its ability to close-out and liquidate positions and to apply and realise collateral held as margin cover, is remote from legal challenge</li> </ul>
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<b>F) Risk management arrangements and resources</b>	
<p><b>12. Dedicated, specialist staff :</b></p> <p>the clearing house should have adequate, qualified risk management staff to ensure implementation and review of its risk policies and procedures.</p>	<p>The staff should be :</p> <ul style="list-style-type: none"> <li>a) adequate in number ;</li> <li>b) adequate in training ;</li> <li>c) independent from the business development/ commercial function of the clearing house ;</li> <li>d) impartial as between members in their handling of risk issues.</li> </ul>

<b>G) IT arrangements and resources of the clearing house</b>	
<p><b>13. Robust arrangements and continuity :</b></p> <p>the clearing house should have robust IT systems and sufficient resources, whether its own or those supplied by others, to ensure their continued robust performance - so that it can ensure the continuity of central counterparty services necessary to protect the integrity of the market or markets that it clears.</p>	<p>The arrangements should :</p> <ul style="list-style-type: none"> <li>a) ensure that systems are maintained in order to supply a continuous service ;</li> <li>b) ensure rapid business recovery in the event of emergency.</li> </ul>

<sup>12</sup> This standard does not seek to say that each jurisdiction must adopt specific rules to protect national clearing houses but that each clearing house in the EU should seek designation under the *Settlement Finality Regulations* adopted in its country as a result of the EU *Settlement Finality Directive*.

<b>H) Disclosure of risk management practices and of the nature of the clearing house 'guarantee'</b>	
<p>14. Comprehensive published information on risk management : the clearing house should publish and update at suitable intervals a comprehensive description of its risk management practices to illustrate how its arrangements meet the standards – so that its arrangements are transparent and so that confidence in those arrangements can be based on detailed, widely-available knowledge ;</p> <p>the clearing house's rulebook and literature should clearly specify both the scope and extent of the obligations entered into by the clearing house and of the time at which its obligations come into effect.</p>	<p>The risk management information should :</p> <ul style="list-style-type: none"> <li>a) be objective rather than promotional in both content and style ;</li> <li>b) be accurate and as up-to-date as possible ;</li> <li>c) enable a clearing house's practices to be compared to the standards outlined above.</li> </ul>

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