
EACH Paper – Carrots and sticks: How the skin in the game incentivises CCPs to perform robust risk management

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1. Executive summary

With this paper the European Association of CCP Clearing Houses (EACH) aims to discuss the concept of **skin-in-the-game (SIG)**, consider its purpose, compare it to the purpose of other default management resources available at the Central Counterparty Clearing House (CCP) as part of the CCP's default waterfall, as well as explain why EACH is of the opinion that the current calibration of SIG as included in the European Market Infrastructure Regulation (EMIR)¹ is adequate.

The **purpose of SIG** is to ensure the CCP is incentivised to perform robust risk management and that an alignment between the CCP's and clearing members' interests is in place. With their own funds at risk immediately after the contributions of the defaulting clearing member are exhausted, CCPs are very strongly incentivised to exercise prudent risk management to limit the impact on their own funds, thereby limiting the impact on non-defaulted members' funds.

EACH considers that the **current calibration of SIG as included in the EMIR legislation is adequate** because it is proportionate to the size of the CCP, reflects the role of the CCP as risk manager and is calculated on the capital that covers the risk that the CCP is responsible for.

Any attempt to alter the current calibration of the CCP's SIG under EMIR, such as linking it to the CCP's default fund, has the potential of threatening the risk management benefits provided by CCPs, which were crucial to contain the recent financial crisis.

2. Introduction

The role of CCPs

CCPs are independent risk managers for their clearing members (the "members") and mitigate risk by holding pre-funded resources to absorb potential losses due to the default of one or several members. The vast majority of these resources are pledged by the CCP's clearing members as margin (following the 'defaulter pays first' principle) and default fund (following the 'mutualisation' principle as and when the defaulter's resources are exhausted).

The CCP has the primary responsibility for setting margin levels – sufficient to cover all but the most extreme market movements – and default fund requirements that accurately reflect the risk of the transactions that are being cleared, striking the right balance between 'defaulter pays first' and 'mutualisation' principles. For EU CCPs, these requirements are codified in EMIR. The **balance between 'defaulter pays first' and 'mutualisation' principles must ensure that incentives are set in a manner that optimises risk management, preserves market integrity and avoids any moral hazard** that could negatively influence the behaviour of the

¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012R0648&from=EN>

clearing members. Thus, while collateralisation and risk management are operated by the CCP, members contribute to the default fund in proportion to the risk that they have brought to the CCP. In the spirit of EMIR and best risk practices, CCPs’ success is measured by the protection of members’ funds. CCPs regularly perform stress tests² to ensure the potential impact of a member default is minimized. Any losses that would impact the mutualised pool of funds would critically damage a CCP’s reputation and standing in the market and with regulators.

Given the central role of CCPs as risk managers and the crucial importance of setting the incentives appropriately in the waterfall, **it is best practice for the CCP to contribute some of its own capital to such waterfall right before the use of the mutualised resources.** Such contribution creates direct **SIG** for the CCP, which demonstrates the CCP’s commitment to prudent risk management while also ensuring CCPs maintain appropriate incentives to perform robust risk management to minimise losses under a default.

The role of SIG

SIG is therefore the component of the CCP’s default waterfall prior to mutualisation that is contributed by the CCP and, in Europe, corresponds to a **percentage of its regulatory capital under the EMIR legislation.** With their own funds at risk immediately after the contributions of the defaulting clearing member are exhausted, in addition to the business risk associated with failing to manage the default appropriately, CCPs are further incentivised to exercise prudent risk management. This ensures CCPs calculate an appropriate amount of margin and default fund for each member to limit impact the waterfall, including on their own funds and the funds of non-defaulted members. **Figure 1** depicts the different resources that form the CCPs’ default waterfall.

Figure 1: The default waterfall of a CCP

| CCPs’ Default waterfall | Contributed by | Purpose |
|---|----------------------|---|
| 1.- Membership criteria | CCP/Clearing members | <ul style="list-style-type: none"> To ensure a robust CCP structure |
| 2.- Variation margin requirements | Clearing members | <ul style="list-style-type: none"> To cover potential losses of risk takers (Defaulter pays) |
| 3.- Initial margin requirements | | |
| 4- Default Fund (Def. CM) | | |
| 5.- CCP’s Skin-in-the-Game (SITG) | CCP | <ul style="list-style-type: none"> To incentivise the risk manager To demonstrate alignment of CCP and market interest |
| 6.- Mutualised Default Fund (Non-Def. CM) | Clearing members | <ul style="list-style-type: none"> To cover potential losses of risk takers (Mutualisation) |

* Def. CM = Defaulting clearing member

² <http://www.eachccp.eu/wp-content/uploads/2015/12/EACH-What-is-clearing.pdf>

The purpose of **SIG** is to ensure the CCP performs robust management and demonstrate alignment between the CCP's and clearing members' interests. CCPs are very strongly incentivised to exercise prudent risk management to limit impact on their own funds, thereby limiting the impact on non-defaulting members' funds. SIG is a firm, quantifiable demonstration to the market and members of a CCP's accountability to its own risk management standards. Failure to implement a robust default management process and set margins and default fund contributions at an appropriate level to cover potential losses to a particular confidence level will hit the CCP first, to both its SIG funding and market confidence in its business model. A very different purpose is instead served by the **default fund**, which is meant to cover potential losses caused by clearing member defaults in scenarios beyond those included under the defined confidence interval covered by the initial margin (i.e. tail risk). By sharing tail risk, clearing members obtain a very safe CCP at a relatively low cost.

It is therefore clear that, considering their different purposes, **SIG and clearing members' contribution to the default fund cannot be compared**, and calibrating the former as a function of the latter would not lead to a better risk management from the CCP's side, but rather to the CCP subsidizing some of the default losses that the clearing members are responsible for. In addition, it should be taken into consideration that, once the SIG is exhausted, CCPs lose the entire amount of capital dedicated to that purpose. On the contrary, clearing members do not automatically lose their whole contribution to the default fund: instead, they may lose only part of it or even find themselves in a winning position if they manage to acquire the position at a discounted rate during auctions.

3. Calibration of the skin-in-the-game

In the European Union and the United Kingdom

Since the financial crisis, CCPs have been subject to stringent requirements at the European level (EMIR) and global level, through the CPMI-IOSCO Principles for Financial Market Infrastructures (PFMIs)³, in compliance with which EU and UK CCPs must maintain clear and transparent default management processes, including detailed accounts of under what circumstances the mutualised funds of non-defaulting clearing members can be accessed and how the CCP plans to replenish that funding. In addition, the PFMIs recommend, in **Principle 4**, that *"an FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence"* and recommends that CCPs involved in activities with a more-complex risk profile or that are systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates. Principle 4 also states that a CCP waterfall may *"include a defaulter's initial*

³ <https://www.bis.org/cpmi/publ/d101a.pdf>

margin, the defaulter's contribution to a prefunded default arrangement, a specified portion of the CCP's own funds, and other participants' contributions to a prefunded default arrangement⁴.

Furthermore, it is important to point out that CCPs in the EU and the UK are regulated and supervised by their National Competent Authorities (NCAs), colleges of supervisors and ESMA as applicable in line with relevant law.

Because of its role as an incentive and demonstration of robust risk management, it is essential that SIG is adequately calibrated. **EMIR enshrined the best practice of CCP waterfalls** as a sequence of:

- i. defaulter pays first (i.e. the defaulter's contribution to the default fund),
- ii. CCP's SIG contribution,
- iii. mutualisation across non-defaulting clearing members.

Article 43 of EMIR includes minimum standards for all three components, while Article 35 of the EMIR RTS 153/2013⁴ sets the minimum level of the CCP's contribution to **25% of its capital requirements**. This calibration was suggested by ESMA as a result of the public consultations that took place in the process of designing the EMIR legislation. Based on the comments from respondents, ESMA concluded that '*a percentage of 25% seems appropriate and still effective in providing adequate incentives for CCPs to properly structure their risk management*⁵.

As depicted in **figure 2**, in line with Article 16 of EMIR the CCP's capital shall be:

- proportionate to the risk stemming from the activities of the CCP⁶;
- sufficient to ensure an orderly winding-down or restructuring of the activities over an appropriate time span;
- an adequate protection of the CCP against credit, market, counterparty, operational, legal and business risks.

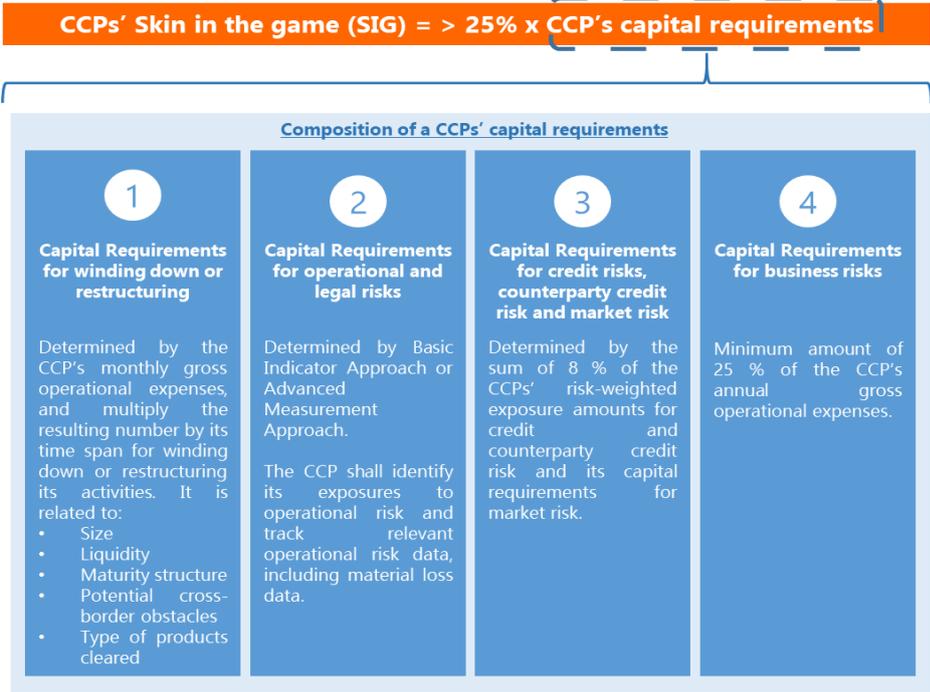
This makes SIG relative to the risk management responsibilities of the CCP. Therefore, the way in which SIG is currently calculated depends on parameters such as the **size of the CCP** and is **revised on an annual basis**. It is also important to underline that the topic of the CCP's capital requirement were **not identified as an issue** either by ESMA or the European Commission when reviewing EMIR, and therefore there is **no quantitative/qualitative evidence** that the current calibration of SIG may be inadequate.

⁴ <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:052:0041:0074:EN:PDF>

⁵ https://www.esma.europa.eu/sites/default/files/library/2015/11/2012-600_0.pdf

⁶ Article 16 of EMIR states that the total capital of CCP shall be high enough to address potential winding down or restructuring, operational and legal risks, credit, counterparty, and market risk as well as business risks.

Figure 2: The capital requirements of a European CCP



Foreign legislation

International standards are silent regarding a minimum amount of SIG that a CCP must dedicate. As already mentioned, **Principle 4 of the PFMI**s requires FMIs to maintain sufficient financial resources to cover their credit exposure to each participant fully with a high degree of confidence, and encourages systemically important CCPs to maintain additional financial resources sufficient to cover a wide range of potential stress scenarios. The 2017 Report "Resilience of central counterparties (CCPs): Further guidance on the PFMI"⁷ also remits to national legislation to regulate on the amount of own resources to provided by the CCPs, stating that a CCP *"should identify the amount of its own financial resources to be applied towards losses resulting from a participant default; this amount may be in excess of any minimum amount required by law."*

In this regard, the **United States**, paragraph (a)(1) of section § 39.11 of "Financial Resources" of the Derivatives Clearing Organization General Provisions and Core Principles⁸ states that *"A derivatives clearing organization shall have adequate financial, operational, and managerial resources, as determined by the Commission, to discharge each responsibility of the derivatives clearing organization. A derivatives clearing organization shall maintain sufficient financial resources to cover its exposures with a high degree of confidence. [...]"* One of the financial resources available to satisfy such requirements is the derivatives clearing organization's own capital, but the legislation does not specify any minimum amount (paragraph (b)(1)). On the

⁷ <https://www.bis.org/cpmi/publ/d163.pdf>

⁸ <https://www.federalregister.gov/documents/2020/01/27/2020-01065/derivatives-clearing-organization-general-provisions-and-core-principles>

contrary, paragraph (c) clarifies that, for the calculation of financial resources requirements, derivatives clearing organization shall have reasonable discretion in determining the methodology used.

Australia also does not define a minimum amount of SIG, but rather incorporates the PFMI in its Financial Stability Standards for Central Counterparties (CCP Standards⁹). However, it is worth noting that in 2013, in the context of an application by an Australia CCP –ASX Clear (Futures) – for recognition in the EU, the Reserve Bank issued a supplementary interpretation of the CCP Standards that applies to domestically licensed CCPs in Australia that offer clearing services to clearing participants that are either established in the EU or subject to EU bank regulations¹⁰. The supplementary interpretation specifies that *"the Bank would expect that a material proportion of pooled financial resources comprised a central counterparty's own resources, and, further, that a sufficient proportion of such resources would be drawn first in the event that a defaulting participant's margin and other contributions were exhausted, so as to ensure that the central counterparty faced appropriate incentives to set robust risk management standards"*.

For what concerns **Canada**, the CPMI-IOSCO 2018 report "Implementation monitoring of PFMI: Level 2 assessment report for Canada"¹¹ finds that all Principles, except for Principle 7, have been implemented in a complete and consistent manner through the implementation measures of the Canadian authorities. The main implementation measures assessed for Canada concerning PFMI Principle 4 comprise the Bank of Canada's Risk-Management Standards for Designated FMIs (Bank of Canada Standards), the CSA's National Instrument 24-102 on Clearing Agency Requirements (NI 24-102)¹² and the related Companion Policy (24-102CP)¹³. The Bank of Canada Standards fully incorporates the Principles and key considerations articulated in the PFMI, without specifying a minimum level of SIG, while the NI 24-102 and the 24-102CP only establish that *"a recognized clearing agency that operates as a central counterparty must dedicate and use a reasonable portion of its own capital to cover losses resulting from one or more participant defaults"*.

A similar comment can be made with regards to **Japan**¹⁴, whose national legislation does not foresee any requirements concerning the minimum amount of SIG, and **Hong Kong**, whose legislation – the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong)¹⁵ – does not include any requirements for the SIG either.

⁹ <https://www.rba.gov.au/payments-and-infrastructure/financial-market-infrastructure/clearing-and-settlement-facilities/standards/201212-new-fss-ris/pdf/attachment-2.pdf>

¹⁰ <https://www.rba.gov.au/publications/bulletin/2015/jun/pdf/bu-0615-9.pdf>

¹¹ <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD608.pdf>

¹² <https://www.bcsc.bc.ca/-/media/PWS/New-Resources/Securities-Law/Instruments-and-Policies/Policy-2/24102-NI-June-19-2020.pdf>

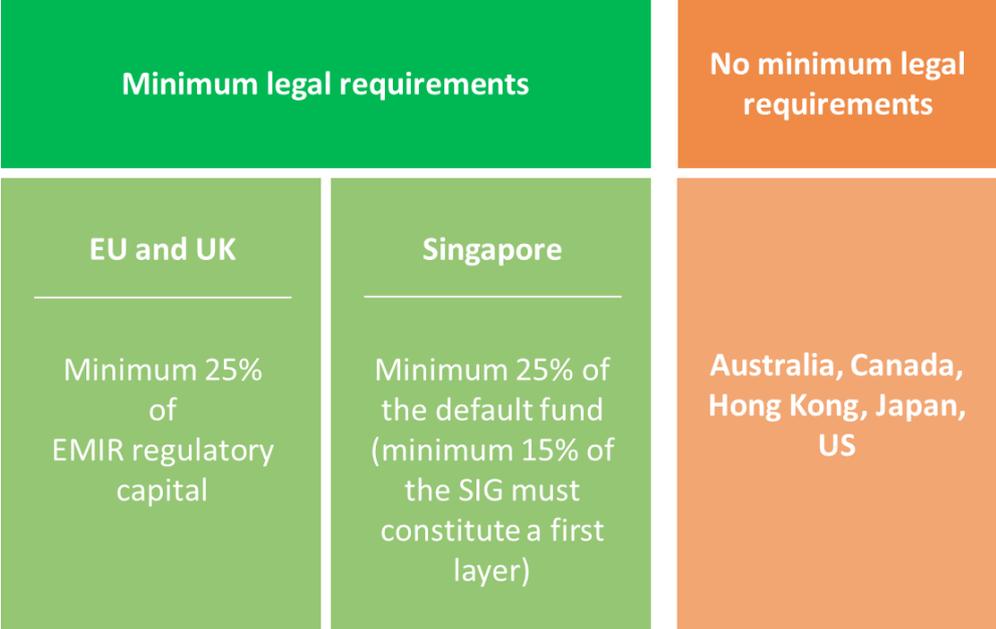
¹³ https://www.osc.gov.on.ca/documents/en/Securities-Category2/ni_20200619_24-102cp_unofficial-consolidation.pdf

¹⁴ Conclusion drawn on the basis of a research conducted by the authors of the paper, who were in contact with the Japan Securities Clearing Corporation (JSCC).

¹⁵ <https://www.elegislation.gov.hk/hk/cap571>

The situation is instead quite different in **Singapore**¹⁶: a regulatory directive from the Monetary Authority of Singapore (MAS) establishes that each Singapore CCP needs to contribute an amount that is at least 25% of the default fund, and that 15% of this SIG must constitute a first layer.

Figure 3 – Third-countries’ legal requirements on SIG



4. Data

Why considering data?

Although no quantitative analysis from public authorities (e.g. ESMA Stress Tests on CCPs; European Commission’s impact assessments) has suggested that the current calibration of the SIG of EU CCPs may not be appropriate, EACH is aware that an increase in the level of SIG has been called for by a number of stakeholders, arguing that in order to ensure proper risk management the amount of SIG should correspond to 20% of the default fund. However, when looking at data it is easy to understand why the current calibration of the EU CCPs’ contribution to the default management well serves its purpose.

Could a higher SIG improve CCP risk management?

As mentioned in Section 2, SIG is an incentive for CCPs to perform robust risk management. In order to serve this purpose, the amount of SIG must be **high enough to “hurt” the CCP** should it be exhausted during the default management process. The metric **“CCP SIG vs CCP profits”** demonstrates that the current calibration of SIG fulfils this objective: EACH has indeed

¹⁶ Conclusion drawn on the basis of a research conducted by the authors of the paper, who were in contact with the Singapore Exchange (SGX). The regulatory directive mentioned is a bilateral directive and is not publicly available.

calculated that, on average, the SIG of EU and UK CCPs represented, at 31 December 2019, **160% of their total profits**¹⁷. This means that if a CCP were to use its SIG it would lose almost **1.6 years of profits** (see Figure 3 below).

Figure 4: CCP SIG vs CCP Profits



It is therefore clear that changing the calibration of SIG by potentially requiring CCPs to put aside a much higher amount of own resources to be employed during the default management would **hardly bring improvements to the CCPs’ risk management** – as we believe that the possibility of losing about 1.6 years of profits already acts as a strong enough incentive to perform robust risk management – but would rather cause collateral damages such as making clearing more expensive and putting EU CCPs at a competitive disadvantage in the international landscape.

Could a higher SIG contribute to a better loss absorption?

A common misconception that EACH has identified is that the SIG is sometimes seen as a loss absorbing tool, and therefore its increase would become useful in case of default of one or more clearing members. However, this is not what the SIG is designed for.

Increasing the SIG would not make much difference as **the SIG of EU and UK CCPs represents, on average, less than 0.15% of the total resources of CCPs** (i.e. initial margins, SIG, default fund, assessment powers)¹⁸, as detailed in Figure 4. While this number may look small, it is high enough to ensure that CCPs are well incentivised to perform robust risk management because, as we have already seen, exhausting the SIG would mean on average burning 1.6 years of profits for European CCPs.

In addition, it is worth pointing out that if the amount of skin in the game was to be increased to correspond to 20% of the default fund, a CCP would make a contribution¹⁹ greater than any other contribution to the default fund made by its clearing member. We could then say that,

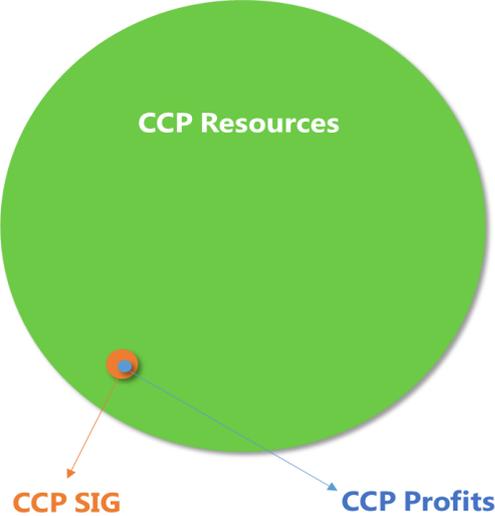
¹⁷ Calculated on the basis of the CPMI-IOSCO Public Quantitative Disclosures (PQD) as of 31 December 2019

¹⁸ Calculated on the basis of the CPMI-IOSCO Public Quantitative Disclosures (PQD) of 31 December 2019

¹⁹ Calculated on the basis of the CPMI-IOSCO Public Quantitative Disclosures (PQD) of 31 December 2019

in practice, the CCP would subsidize some of the default losses that the clearing members are responsible for, becoming a risk taker rather than a risk manager.

Figure 5: CCP SIG vs CCP Profits and CCP Resources vs CCP SIG



What do CCPs consider as good incentives to perform robust risk management?

A survey was conducted among EACH Members in Q2 and Q3 2020 concerning what they deem to be appropriate incentives to perform good risk management, taking into consideration the various proposals put forward during the EU negotiations on the CCP Recovery and Resolution framework.

It is however necessary to take into account that the incentives proposed are interrelated. As an example, the loss of the SIG would be a direct hit to the CCP capital and therefore impacting executive pay/bonuses as well as reducing dividends. This, by definition, impacts the franchise value of company, and any loss of shareholders' funds will lead to consideration of the actions of the executives and the extent to which the loss could/should have been avoided. As such, it could be concluded that the real incentive for management is the first SIG as the knock-on effects of the loss of this feed through into the other areas.

The outcome of the survey is the following:

- **SIG** – All of the 10 respondent EACH Members agreed that the SIG does serve as a strong incentive for CCPs to manage clearing as well as counterparty credit risk in a robust and efficient manner, e.g. by performing a conservative sizing of initial margin requirements.
- **Additional own resources (i.e. 2nd SIG)** – 7 out of the 10 respondents expressed strong concerns towards the opinion – apparently popular amongst certain stakeholders – that introducing a 2nd layer of SIG at the beginning of the recovery phase could constitute a good incentive for CCPs to perform good risk management. The respondents argued that:

- The “first” amount, sized per existing regulation (e.g. EMIR), is sufficient, and any more would distort the incentives structure on which the clearing space is based as well as increase the cost of clearing.
- Adding a 2nd SIG would most probably have an adverse effect on market liquidity.
- The *additional* value of the 2nd SIG is questionable, since no CCP wants to enter the recovery phase as the reputational risk is too high.
- The disciplinary role of a 2nd SITG is controversial because a higher burden on CCPs could have the opposite effect, i.e. loosen risk management could be the result of efforts to out-weight the higher cost of capital.

In addition, those 3 respondents who were not against the idea of a 2nd SIG as an additional incentive however expressed certain skepticism, arguing that the impact of the 2nd SIG on CCP risk management would be very little.

- **Potential restrictions of payment of executives’ bonuses** – There were different views among respondents regarding this possibility, with 5 Members considering such restrictions as a possible incentive and 5 Members that were of the opposite idea. However, the comments received point that Article 26 of EMIR already requires CCPs to *‘adopt, implement and maintain a remuneration policy which promotes sound and effective risk management and which does not create incentives to relax risk standards’*. One respondent in particular pointed out that restricting the payment of executives’ bonuses could serve as an additional incentive, but its use should be limited to cases where the CCP has faced losses or has been put into trouble due to the Board’s inadequate actions or decisions.
- **Potential restriction of payment of dividends** – While 4 respondents were of the opinion that restricting the payment of dividends might serve as an additional incentive for the CCP’s shareholders to make sure that the CCP’s Executive Board manages risk properly, 6 respondents did not consider this option to be a good incentive to perform robust risk management, arguing that:
 - For the purpose of proper corporate governance, it should always be the owners/shareholders’ decision to pay dividends or distribute profit as long as the regulatory capital requirement of the CCP is fulfilled. CCPs act as stabilizers of the capital markets, whereby the owners provide risk capital that is subject to interest.
 - CCPs would not pay any dividend anyway in case of a large default of one or more of their clients since the margins of CCPs are much smaller compared to banks/insurance companies.
 - The risk absorption capacity is not related to the risk management function.
- **Reputational damage** – A respondent explained that the usage of the mutual default fund causes important reputational damage and might take a CCP out of business. Hence, having sufficient level of margins to prevent this from happening is a big incentive for any CCP.

5. Conclusion

EACH believes that SIG is an important component of the CCP's risk management structure. It ensures the CCP's prudent risk management strategies while demonstrating the correct incentive alignment between the CCP and the members for the CCP to perform optimal risk management and for the members to contribute to the default fund and default management procedures. It acts in conjunction with existing default management policies to ensure all participants act in the best interest of the market in a time of market stress.

EACH believes the calibration of SIG as defined under EMIR is proportionate to the size of the CCP, reflects the role of the CCP as a risk manager and is calculated on the capital that covers the risk that the CCP is responsible for (regulatory capital). EACH considers this calibration is sufficient in approach and in magnitude. Calibrating SIG on any other base would effectively create confusion between the role of risk manager (CCP) and the position of risk taker (clearing members), misaligning the incentives between the CCP and its clearing members.

For these reasons, EACH sees any attempt to alter the current calibration of the CCP's SIG under EMIR as a potential threat to the risk management benefits provided by CCPs, which were crucial to contain the recent financial crisis.

- END -

Appendix 1 - Resources

| Body | Date | Title | Contents/Key elements |
|--|----------------|--|--|
| CPMI-IOSCO | April 2012 | Principles for financial market infrastructures | <ul style="list-style-type: none"> • 3.0 – Principles for financial market infrastructures <ul style="list-style-type: none"> ○ Credit and liquidity risk management <ul style="list-style-type: none"> ▪ Principle 4 – Credit Risk |
| Official Journal of the European Union | July 2012 | Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories | <ul style="list-style-type: none"> • EMIR Article 16 • EMIR Article 43 |
| ESMA | September 2012 | Draft technical standards under the Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC Derivatives, CCPs and Trade Repositories | <ul style="list-style-type: none"> • IV. Central counterparties <ul style="list-style-type: none"> ○ IV.IX Default waterfall <ul style="list-style-type: none"> ▪ Paragraph 227 |
| Official Journal of the European Union | December 2012 | Commission Delegated Regulation (EU) No 153/2013 of 19 December 2012 supplementing Regulation (EU) No 648/2012 of the European Parliament and of the Council with regard to regulatory technical | <ul style="list-style-type: none"> • Article 35 of the EMIR RTS 153/2013 |

| | | | |
|---|---------------|---|--|
| | | standards on requirements for central counterparties | |
| Reserve Bank of Australia | December 2012 | Financial Stability Standards for Central Counterparties | <ul style="list-style-type: none"> • CCP Standards <ul style="list-style-type: none"> ○ Standard 4: Credit risk |
| Reserve Bank of Australia | June 2015 | Skin in the Game – Central Counterparty Risk Controls and Incentives | <ul style="list-style-type: none"> • Regulatory requirements |
| European Association of CCP Clearing Houses | December 2015 | EACH Presentation: What is Clearing? | <ul style="list-style-type: none"> • What is clearing? • How does clearing work? • What happens in practice when a CCP declares a clearing member in default? |
| CPMI-IOSCO | June 2017 | Resilience of central counterparties (CCPs): Further guidance on the PFMI | <ul style="list-style-type: none"> • Guidance <ul style="list-style-type: none"> ○ Losses related to a participant’s default |
| CPMI-IOSCO | August 2018 | Implementation monitoring of PFMI: Level 2 assessment report for Canada | <ul style="list-style-type: none"> • 4.2.2 – Central Counterparties <ul style="list-style-type: none"> ○ Principle 4 |
| Commodity Futures Trading Commission | January 2020 | Derivatives Clearing Organization General Provisions and Core Principles | <ul style="list-style-type: none"> • § 39.11 – Financial resources |
| British Columbia Securities Commission | June 2020 | National Instrument 24-102 – Clearing Agency Requirements | <ul style="list-style-type: none"> • Part 1 – Definitions, interpretation and application • Part 2 – Clearing Agency recognition or exemption from Recognition • Part 3 – PFMI principles applicable to recognized Clearing Agencies • Part 4 – Other requirements of recognized Clearing Agencies • Part 5 – Books and records and legal entity identifier |

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|-------------------------------|---------------|--|--|
| Ontario Securities Commission | June 2020 | Companion Policy 24-102CP – Clearing Agency Requirements | <ul style="list-style-type: none">• Part 3 – PFMI Principles Applicable to recognized Clearing Agencies |
| Hong-Kong e-legislation | November 2020 | Cap. 571 Securities and Futures Ordinance | <ul style="list-style-type: none">• Part III – Exchange Companies, Clearing Houses, Exchange Controllers, Investor Compensation Companies and Automated Trading Services |