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## THE CORPORATE GOVERNANCE OF CENTRAL COUNTERPARTIES AND SHAREHOLDER PRIMACY: A RE-EVALUATION IN THE PRESENCE OF SYSTEMIC RISK

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Amidst the catastrophic collapse of Lehman Brothers in September 2008, central counterparties ('CCPs') worldwide kept the global securities and derivatives exchanges afloat by rescuing trillions of dollars of trades affected by the bankruptcy.<sup>2</sup> As described in greater detail below, a CCP or so-called 'clearinghouse' is a financial institution that interposes itself between the contract parties of a trade and becomes the buyer to every seller and the seller to every buyer. In doing so, the CCP takes on the counterparty risk of the transferred trades, i.e. the risk that the counterparty of the trade will not perform its side of the trade.<sup>3</sup> The reasoning is that CCPs have access to better techniques to manage counterparty risk than the original counterparties. For example, CCPs organise a mutualisation mechanism as buffer for counterparty defaults.

The successful performance of CCPs during the crisis has put them on the regulatory agenda as new financial bulwark against systemic contagion in the over-the-counter ('OTC') derivatives market.<sup>4</sup> Before the crisis, CCPs were mainly used for standardised securities that are listed and traded on regulated exchanges.<sup>5</sup> After the crisis, regulators worldwide put CCPs forward as the 'magic bullet' to stop financial contagion caused by the counterparty defaults in the OTC derivatives market by pushing as many OTC derivatives as possible through the CCP mechanism. By guaranteeing the OTC derivatives of a failing institution, the CCP can supposedly prevent the failure of one institution from spreading

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<sup>2</sup> For a detailed account on how CCPs intervened in the bankruptcy of Lehman Brothers, see Peter Norman, *The Risk Controllers: Central Counterparty Clearing in Globalised Financial Markets* (Wiley 2011).

<sup>3</sup> Jon Gregory, *Central Counterparties: Mandatory Clearing and Bilateral Margin Requirements for OTC Derivatives* (Wiley 2014) 6; Norman (n 2) 7.

<sup>4</sup> See for example G20 Summit Pittsburgh September 2009; preamble (5) and (6) European Market Infrastructure Regulation ('EMIR').

<sup>5</sup> Pirrong, 'The Economics of Central Clearing Theory and Practice' [2011] ISDA Discussion Papers Series 1.

to its counterparties. In the EU, the European Market Infrastructure Regulation ('EMIR') introduces mandatory clearing via CCPs for certain standardised OTC derivatives.

However, the centralisation of risks also makes CCPs central nodes in the financial market, whose failure could have devastating consequences for systemic stability. In recognition of this, the US Financial Stability Oversight Council ('FSOC') has designated five central counterparties as systemically important.<sup>6</sup> It is therefore essential from a systemic risk perspective that CCPs correctly manage their risk exposure. This lays bare the weakness of the new system: CCPs are in essence private institutions established for furthering the interests of private parties, not the interests of the prudential regulator. Indeed, the first CCP-type institution was created to mitigate the problems of counterparty risk management experienced by commodities traders. There was no regulatory mandate for traders to submit trades to the institution nor did the institution have any obligation to accept trades.<sup>7</sup> The risk governance structure of CCPs necessarily reflects these private commercial considerations rather than the artificially introduced prudential ones. The governance challenge in CCPs therefore lies in ensuring that managers take decisions that safeguard their long-term financial stability.

This paper contributes to the debate regarding the governance of CCPs by re-evaluating the appropriateness of the predominant view in Anglo-American corporate governance scholarship that a firm should be run in the interests of its shareholders.<sup>8</sup> In particular, the paper argues that CCPs focused on generating revenue for their shareholders do not have the best incentives to prevent systemic risk generated by their activities. This observation has important implications for the design of the governance of CCPs and in particular requires a re-evaluation of the focus on shareholder value maximisation. The paper shows that the current EU regulatory framework fails to deliver in this respect.

Although the analysis focuses on the Anglo-American shareholder primacy model, the implications of the analysis are relevant to EU companies operating in a more stakeholder-focused jurisdiction. Indeed, the maximisation of shareholder value has – to some extent – become a

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<sup>6</sup> FSOC, 'Appendix A – Designation of Systemically Important Financial Market Utilities' [2012] Annual Report.

<sup>7</sup> For a detailed account of the history of CCPs, see Norman (n 2).

<sup>8</sup> Frank H Easterbrook and Daniel R Fischel, *The Economic Structure of Corporate Law* (Harvard University Press 1991) 38; Milton Friedman, 'The Social Responsibility of Business Is to Increase Its Profits' [1970] *The New York Times Magazine*; Jonathan R Macey, *Corporate Governance: Promises Kept, Promises Broken* (Princeton University Press 2008).

social norm, even in member states that do not prescribe it. This is because there is often a lack of guidance on how to balance different stakeholders' interests, while acting in the company's best interests.<sup>9</sup>

The paper fits within the wider discussion taking place in the corporate law literature regarding the appropriateness of the 'shareholder primacy' paradigm for the governance of firms.<sup>10</sup> In banks<sup>11</sup>, for example, the emerging consensus is that shareholders will not consider the systemic losses that the activities of (large) banks may generate; a retreat from the shareholder value maximisation model in banks is therefore desirable in the interest of financial stability.<sup>12</sup> The re-evaluation is taking place outside the financial sector as well. The UK Corporate Governance Code 2018, for example, includes a new provision asking the board to describe in its annual report how it considered the interests of other stakeholders under their duty under Section 172 of the 2006 Companies Act.<sup>13</sup> In the EU, there are regulatory initiatives underway to improve the EU regulatory framework to enable companies to focus on long-term sustainable value

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<sup>9</sup> See for example the EY, 'Final Report for the European Commission – Study on directors' duties and sustainable corporate governance' (2020), 32–33.

<sup>10</sup> See for example the ebook published by the Sigler Center at the University of Chicago to mark the 50-year anniversary of Friedman's seminal New York Times piece on the social responsibility of business, Luigi Zingales, Jana Kasperkevic and Asher Schechter (eds), *Friedman's Principle, 50 Years Later* (Stigler Center) [www.promarket.org/wp-content/uploads/2020/11/Milton-Friedman-50-years-later-ebook.pdf](http://www.promarket.org/wp-content/uploads/2020/11/Milton-Friedman-50-years-later-ebook.pdf) accessed 1 April 2020.

<sup>11</sup> See for a more general discussion of the role of corporate governance in addressing systemic risk, K. Morbee, 'The Role of Corporate Governance in a Macroprudential Framework' (2020) Chicago Law Review Online.

<sup>12</sup> John Armour and others, *Principles of Financial Regulation* (Oxford University Press 2016) 371; John Armour and Jeffrey N Gordon, 'Systemic Harms and Shareholder Value' (2014) 6 *Journal of Legal Analysis* 35; Jonathan R Macey and Maureen O'Hara, 'The Corporate Governance of Banks' (2003) 9 *Economic Policy Review* 91; Joel Shapiro, Alan Morrison and Hamid Mehran, 'Corporate Governance and Banks: What Have We Learned from the Financial Crisis?' in Mathias Dewatripont and Xavier Freixas (eds), *The crisis aftermath: new regulatory paradigms* (Centre for Economic Policy Research 2012).

<sup>13</sup> Section 172 requires a director to 'act in the way he considers, in good faith, would be most likely to promote the success of the company for the benefit of its members as a whole, and in doing so have regard (amongst other matters) to [...] the interests of the company's employees [...] [and] the impact of the company's operations on the community and the environment'. The phrasing of the section implies that the interests of other stakeholders are only considered to the extent they promote the interests of the shareholders. As a result, this new provision cannot be seen as a departure from shareholder accountability as the general model of corporate governance. The UK Listing Rules require companies to comply with the Main Principles of the Code. The Code is based on the 'comply or explain' model, i.e. deviation of the corporate governance rules in the code should be explained to shareholders, see for the provisions of the new code Financial Reporting Council, 'The UK Corporate Governance Code' (2018).

creation.<sup>14</sup> More generally, the re-evaluation of shareholder primacy comes at a time where the sustainability of corporate activities is increasingly put under scrutiny.<sup>15</sup>

The paper proceeds in three parts. The first part introduces CCPs. It describes the CCP's business model and discusses the systemic risk generated by CCPs. In the second part, we analyse the incentives of the CCP shareholders and argue that these are not aligned with the goals of the prudential regulator. Finally, in the third part, we argue that the current EU regulatory framework fails to address this issue and call for a re-evaluation of the governance of CCPs.

## **1. AN INTRODUCTION TO CCPs**

### **1.1 The business model**

A CCP is a post-trade and pre-settlement market infrastructure. CCPs interpose themselves between the contract parties of a trade executed on an exchange, trading platform, or in the OTC market. Once trades are transferred to the CCP, the CCP becomes the buyer to every seller and the seller to every buyer. CCPs run a 'matched book', i.e. the position taken with the original buyer is always offset by the position taken with the original seller. The contract parties are no longer exposed to each other, but to the CCP. A core responsibility of the CCP is, therefore, to assist market participants in managing the counterparty credit risk of the transferred trades, i.e. the risk that the counterparty of the trade will not perform its side of the trade.<sup>16</sup>

In order to manage the risks involved, CCPs only allow market participants who meet certain membership requirements to use their services and transfer trades. These membership requirements aim to ensure that CCP users have sufficient resources to meet the obligations arising from participation in the CCP. Market participants who meet the

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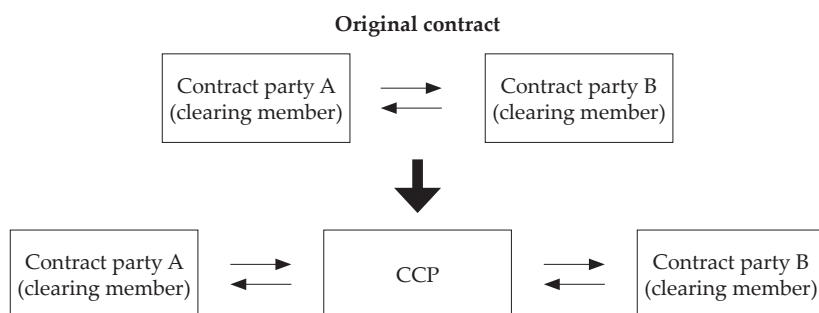
<sup>14</sup> See for example the recent European Commission consultation 'to gather data and to collect the views of stakeholders with regard to a possible initiative on sustainable corporate governance', see European Commission, 'Sustainable Corporate Governance Initiative – Summary Report – Public consultation', Ref. Ares(2021)3297206 6 – 18/05/2021.

<sup>15</sup> For example, in a recent paper Beate Sjøfjell and Mark B. Taylor describe shareholder primacy as 'a fundamental obstacle to corporate sustainability', see Beate Sjøfjell and Mark B Taylor, 'Clash of Norms: Shareholder Primacy vs. Sustainable Corporate Purpose' (2019) 13 *International and Comparative Corporate Law Journal*.

<sup>16</sup> Gregory (n 3) 6; Norman (n 2) 7.

CCP membership requirements are called ‘clearing members’ (Figure 1. Central clearing 1). Only a fraction of the participants active on the relevant markets are admitted as clearing members.<sup>17</sup>

Market participants who wish to participate in the CCP, but are not clearing members, must enter into a contract with a clearing member and become a ‘client’ of that clearing member. In other words, the client can access the clearing services provided by the CCP by entering into a contractual relationship with an eligible clearing member. In Europe, the transaction is structured according to the ‘principal to principal’ model.<sup>18</sup> The client enters into a direct contractual relationship with the clearing member. The clearing member in turn will take on a direct contractual responsibility towards the CCP for the financial obligations arising from that client’s participation.<sup>19</sup> There is no direct contractual relationship between the client and the CCP (Figure 2). Clearing members tend to be the big investment and commercial banks that act as dealers in the market and earn money by charging fees – typically embedded in the price of the contracts – for matching the trades of non-clearing member market participants.

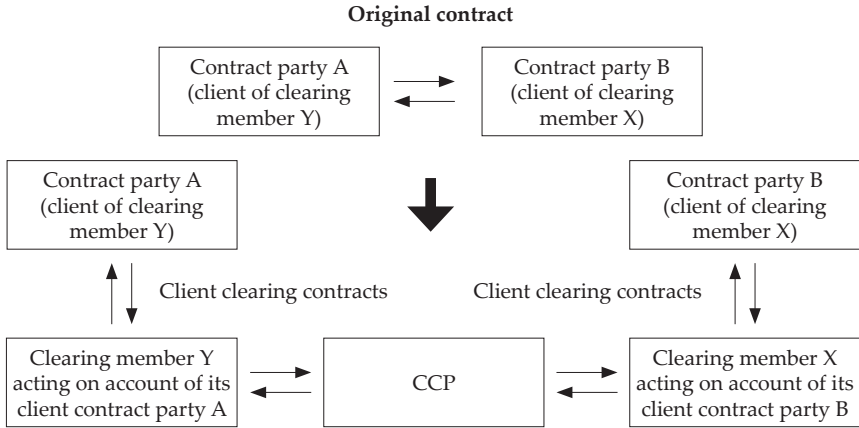


**Figure 1. Central clearing**

<sup>17</sup> Norman (n 2) 8.

<sup>18</sup> In the US, on the other hand, client clearing is organised according to the ‘agency’ model, i.e. the clearing member acts as the agent for the client in the relationship with the CCP. In other words, there is a direct contractual relationship between the CCP and the client. The clearing member, however, guarantees the obligations of the client towards the CCP, see Jo Braithwaite, ‘The Dilemma of Client Clearing in the OTC Derivatives Markets’ (2016) 17 *European Business Organization Law Review* 355, 364–365.

<sup>19</sup> This is called a riskless principal transaction. The ‘riskless’ refers to the fact that the transaction of the clearing member with the CCP is perfectly backed or ‘mirrored’ by the clearing member’s transaction with its client.



**Figure 2. Client clearing with two clearing members**

In the case that a clearing member defaults on its obligations to the CCP, the CCP's book is no longer perfectly matched, exposing the CCP to market risk. Over the years CCPs have developed a number of techniques and processes to restore their matched book in the event of default. CCPs can restore the matched book by – for example – the organisation of a voluntary auction of the portfolio of the defaulted clearing members amongst the non-defaulting members.<sup>20</sup> Other measures are full or partial contract tear-ups<sup>21</sup> or forced allocation of contracts to non-defaulting clearing members.<sup>22</sup>

To cover the losses incurred, CCPs rely on a panoply of financial resources that will be used sequentially in the case of a default – the so-called 'default waterfall'. The default waterfall consists of a combination of margin (collateral), risk sharing mechanisms, and CCP capital. First, CCPs impose margin requirements on their clearing members, which function as the first line of support in the case of clearing member default. Each clearing member will post margin collateral to the CCP to cover the risk exposure of the CCP. Clearing members post 'initial margin' when the transaction is initiated, which covers the counterparty risk exposure at that time. At that moment, there is no market risk yet. In order to cover exposures to market risk during the life of the contract, parties will be obliged to post 'variation margin' to adjust their positions to the changes in market prices.

<sup>20</sup> ISDA, 'CCP Default Management, Recovery and Continuity: A Proposed Recovery Framework' 3 [www2.isda.org/attachment/NzE5OQ==/CCP%20Default%20Management%20recovery%20and%20continuity%2026-01-2015.pdf](http://www2.isda.org/attachment/NzE5OQ==/CCP%20Default%20Management%20recovery%20and%20continuity%2026-01-2015.pdf) accessed 22 October 2017.

<sup>21</sup> In the case of tear-ups, the contract parties of the cleared instruments subject to the tear-up procedures are released from their future obligations under the contract.

<sup>22</sup> ISDA (n 20) 10.

The surviving clearing members will also bear part of the losses via risk sharing mechanisms. These can be provided pre-default, for example through a contribution to a default fund. CCPs typically also require non-defaulting clearing members to contribute additional funds in the event of a default of another clearing member. These are called contingent ‘capital calls’. In contrast to default fund contributions by clearing members, capital calls are only triggered ex-post, i.e. once a clearing member has defaulted. CCPs can also apply variation margin gains haircutting (‘VMGH’) to strengthen their balance sheets. VMGH releases the CCP from its obligation to post the mark-to-market variation margin gains due to the clearing members, accumulated since the clearing member default.<sup>23</sup> Furthermore, CCPs will put part of their own capital in line to cover default losses, referred to as ‘skin-in-the-game’ for CCP shareholders.

The default waterfall determines the order in which these resources are consumed. Typically, CCPs first use the defaulting clearing member’s margin and default fund contributions.<sup>24</sup> The CCP equity and the non-defaulting clearing members’ contributions will absorb losses in excess of this.

## **1.2 CCPs and systemic risk**

Although CCPs can reduce systemic risk to some extent, the activities of CCPs can also have a significant negative impact on financial stability in the case of poor financial and operational management of the risk exposure. The systemic instability caused by the activities of CCPs could take at least three forms.

First, the rigid margin requirements of CCPs can negatively affect asset prices during shocks.<sup>25</sup> For example, in order to meet variation margin obligations after a price shock, clearing members might have to liquidate positions to free-up cash to meet margin requirements. Depending on how large the positions are relative to the market size, these asset sales can result in illiquidity of that market and a drop of the asset prices, which can have further destabilising effects.

Second, the CCP interconnects important players in the financial market through the risk mutualisation mechanism. When a clearing member defaults, the CCP might function as a contagion channel to affect other

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<sup>23</sup> ISDA, ‘CCP Loss Allocation at the End of the Waterfall’ [2013] [www.isda.org/a/jTDDE/ccp-loss-allocation-waterfall-0807.pdf](http://www.isda.org/a/jTDDE/ccp-loss-allocation-waterfall-0807.pdf) Accessed 25 July 2018.

<sup>24</sup> Pirrong (n 5) 9.

<sup>25</sup> *Ibid* 36–37.



clearing members. For example, once the pre-default funds in the waterfall are exhausted, the clearing members can be asked to provide additional capital. Such capital calls can be destabilising for the other clearing members, especially when market conditions deteriorate. This can be dangerous, since the clearing members are often systemically important financial institutions.<sup>26</sup> It is, therefore, essential that CCPs carefully calibrate and manage the *pre*-default margin, default fund contributions, and their own resources to prevent capital calls *post*-default.

Third, the CCP itself might default due to liquidity and solvency problems. Such solvency and liquidity problems might lead to problems for non-defaulting clearing members, as their transactions are no longer insured by the CCP mechanism.<sup>27</sup> The CCP would become insolvent if the financial resources in the waterfall and its own equity are insufficient to cover the obligations of defaulting members. But even if the CCP has enough resources, it might be unable to expeditiously liquidate the defaulter's posted assets or its own assets to cover obligations of a defaulting clearing member. Regulators increasingly recognise the importance of liquidity management in CCPs. Art. 44 EMIR requires the CCP to have adequate liquidity to perform its services and activities. The CCP must be able to cover the liquidity risk generated by the default of at least the two clearing members to which it has the largest exposure. Furthermore, on 29<sup>th</sup> of March 2015, the ECB and the Bank of England announced that they will consider providing liquidity support to CCPs if necessary. This is now formalised under the Sterling Monetary Framework ('SMF').

## **2. PERVERSE INCENTIVES SHAREHOLDERS**

In this part, the paper argues that the shareholders or owners of CCPs have perverse incentives to increase the systemic risk generated by CCPs. In order to determine the exact nature of these perverse incentives, we distinguish between three different types of ownership structures. The type of ownership structure will influence the incentives of the CCP shareholders because the ownership structure influences the extent to which owners are liable for the default of clearing members. We can distinguish three ownership structures: 'user-owned', 'non-user-owned', and 'hybrid'.

Firstly, in some cases, clearing members own the CCP through which they clear their trades. We call this a 'user-owned CCP'. An example of a user-owned CCP is SIX-x-clear, a Swiss CCP. All shares of SIX x-clear Ltd are

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<sup>26</sup> David Murphy, *OTC Derivatives: Bilateral Trading and Central Clearing* (Palgrave Macmillan 2013) 151.

<sup>27</sup> Pirrong (n 5) 37.

held by its parent SIX Securities Services Ltd, which is wholly owned by SIX Group Ltd. SIX Group Ltd in turn is a Swiss unlisted public limited company owned by national and international banks. This entails that *de facto* SIX x-clear – through a chain of wholly owned subsidiaries – is owned by the users of its clearing services.<sup>28</sup> No user has a majority stake in the SIX Group.<sup>29</sup> Ownership by clearing members implies that clearing members will suffer additional losses through any erosion of the CCP's equity caused by a clearing member default.

In 'non-user-owned' CCPs, in contrast, ownership and membership are separated. For example, CCPs can be owned by central securities depositories, exchanges, and diversified shareholders in cases of listing as a public company. They are often part of a vertically integrated group for trading infrastructure (e.g. in case of exchange ownership).<sup>30</sup> An example is BME Clearing, which is owned by the BME Group, the operator of all stock markets and financial systems in Spain and publicly listed.

Some CCPs are organised according to the 'hybrid' model and have an ownership structure composed of both users and non-users. For instance, in some CCPs user-ownership is combined with ownership by exchanges or other financial institutions. For example, the London Stock Exchange owns a majority stake in LCH Group Holdings Limited, the parent of the CCP LCH Limited, while some of LCH Limited's clearing members own minority stakes in the equity of the group.

Historically, most CCPs were user-owned. CCPs were owned and managed by the banks and investment houses active in the relevant market.<sup>31</sup> Recently, however, there has been a trend towards reducing the user-ownership of CCPs, known as 'demutualisation'. For example, exchanges have been keen to acquire CCPs to create vertical synergies.<sup>32</sup> The acquisition of a majority stake in LCH by the London Stock Exchange is an illustrative example of such vertical integration. Whereas it was previously owned by a majority of clearing members, the London Stock Exchange now controls the CCP. Below, we discuss the perverse incentives of shareholders under each ownership structure.

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<sup>28</sup> SIX, 'Financial Statements 2020' [2020] [www.six-group.com/dam/download/the-swiss-stock-exchange/post-trade/clearing/info-center/annual-reports/2020/annualreport-six-x-clear-2020.pdf](http://www.six-group.com/dam/download/the-swiss-stock-exchange/post-trade/clearing/info-center/annual-reports/2020/annualreport-six-x-clear-2020.pdf) Accessed 17 May 2021.

<sup>29</sup> [www.six-securities-services.com/en/home/clearing/about/governance.html](http://www.six-securities-services.com/en/home/clearing/about/governance.html); [www.six-group.com/en/home/company/governance.html](http://www.six-group.com/en/home/company/governance.html) Accessed 10 December 2020.

<sup>30</sup> Bank for International Settlements, 'Market Structure Developments in the Clearing Industry Implications for Financial Stability: Report of the Working Group on Post-Trade Services' [2010] [www.bis.org/publ/cpss92.pdf](http://www.bis.org/publ/cpss92.pdf) 63.

<sup>31</sup> Yesha Yadav, 'The Problematic Case of Clearinghouses in Complex Markets' (2013) 101 *The Georgetown Law Journal* 387, 414.

<sup>32</sup> *ibid.*

## **2.1 Perverse incentives in the user-owned model<sup>33</sup>**

In the user-owned model, the owner-clearing members suffer losses for clearing member default beyond their equity investment. Where shareholders normally enjoy limited liability, owner-clearing members will be liable beyond their equity investment for the losses caused by the default of a clearing member once the ex-ante contributions of the defaulting clearing member are exhausted. As clearing members, they will have to contribute default fund contributions ex-ante and potentially capital calls ex-post. Mechanisms such as VMGH and forced allocation of positions also allocate losses ex-post to non-defaulting clearing members. As owners, they will bear the losses through erosion of the CCP capital. As a result, the owner-clearing members bear the counterparty risk assumed by the CCP, in their joint capacity as both bearers of liability under the CCP co-insurance mechanism and as residual owners. Put differently, owner-clearing members have significant ‘skin in the game’.

This – at first sight – gives shareholders the necessary incentives to exercise precaution, as they bear more of the downside of risky behaviour. In this regard, Saguato argues in favour of organising CCPs as user-owned vehicles – against the current trend of demutualisation in the industry – in order to better align the ownership structure with prudential policy goals.<sup>34</sup> However, we argue that the incentives of owner-clearing members are not necessarily fully aligned with systemic risk concerns. This is so because owner-clearing members can externalise part of their default liability due to correlation between clearing member defaults and (implicit) government guarantees. Such systemic externalities distort the incentives to invest in ex-ante prevention of liability with significant systemic consequences. Hereunder, each component of the reasoning is discussed in more detail.

To start, the ability of owner-clearing members to externalise part of their liability for default will distort incentives to invest in ex-ante prevention of liability. In deciding how much to invest in ex-ante prevention of liability, an additional unit of ex-ante costs to prevent liability will be weighted against the marginal benefit in the amount of ex-post liability. In a user-owned CCP, owner-clearing members directly bear the ex-ante costs of prudent counterparty risk management through margin, default fund, and capital contributions. They also bear the costs of monitoring the riskiness of the CCP. They will want to reduce these risk management

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<sup>33</sup> We will consider as ‘user-owned’ a CCP in which all the clearing members are also owners of the CCP.

<sup>34</sup> Paolo Saguato, ‘The Ownership of Clearinghouses: When “Skin in the Game” Is Not Enough, the Remutualization of Clearinghouses’ (2017) 34 *Yale Journal on Regulation* 601.

costs to the extent that the marginal reduction in costs is bigger than the marginal increase in expected liability for the default of another clearing member.

In CCPs this mechanism will result in underinvestment in ex-ante prevention because the owner-clearing members might be able to externalise part of the costs of ex-post liability for at least two reasons. First, the probability that clearing members will have to pay for each other's defaults is decreased because the defaults of clearing members are correlated. Owner-clearing members will not bear the ex-post costs of the default of a clearing member when they are bankrupt themselves.<sup>35</sup> These costs will be borne by the owner-clearing member's stakeholders.

Take the example of a user-owned CCP with three members (CM1, CM2, CM3). When entering the CCP, all three clearing members take on the liability for the default of the other two clearing members. In return, each clearing member enjoys the insurance provided by the other two members for its own default. Let's assume that the total credit exposure of the CCP to its clearing members is divided equally among the three members. The clearing members also equally contribute to the equity of the CCP. Every clearing member has to post an equal amount of initial margin and default fund contribution based on this exposure. These are ex-ante costs that need to be made to enter into the co-insurance system and that make the use of the central clearing mechanism more expensive. All three clearing members will want to reduce these ex-ante costs for themselves.

The three clearing members do not know ex-ante which of the three will default. However, they do know that there might be a positive correlation between their respective defaults. This is especially the case when the reasons for a default are endogenous to the defaulting clearing member's industry and/or the defaulting clearing member can impact the stability of the financial system on an individual basis. Indeed, clearing members operate in the same industry, are exposed to the same risks, and could be affected by a collapse of that industry caused by the default of an important player. Furthermore, the CCP co-insurance creates an additional link between the failure of the three clearing members, which would not have been present in a bilateral context. For example, when

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<sup>35</sup> Griffith – based on the theory of correlation-seeking developed by Squire – already signalled that large derivatives dealers might 'intentionally undertake large amounts of contingent risk correlated to other events likely to lead to their defaults', see Sean J Griffith, 'Governing Systemic Risk: Towards a Governance Structure for Derivatives Clearinghouses' (2012) 61 *Emory Law Journal* 1153, 1203–1204; Richard Squire, 'Shareholder Opportunism in a World of Risky Debt' (2010) 123 *Harvard Law Review* 1151.

the ex-ante provided funds prove to be insufficient to absorb the losses of the default of CM1, clearing members CM2 and CM3 can be asked to contribute additional capital through capital calls, which can have a detrimental effect on the stability of CM2 and CM3 who might already be experiencing difficult economic conditions. Ex-post contributions increase the correlation between the clearing members' defaults. Along the same lines, Armakolla and Laurent show that the probability of default of a non-defaulting clearing member is significantly higher under the assumption that two other (average) clearing members have already defaulted.<sup>36</sup> In sum, while ex-post liability for the default of another clearing member can never be entirely excluded, the correlation between defaults does reduce the probability of ex-post liability.

Given such correlation and given the fact that the three clearing members do not know ex-ante who will default, the three clearing members have incentives ex-ante to push their contribution to those elements of the default waterfall that are triggered after the default of a member, such as capital calls. This not only reduces the ex-ante costs, but also increases the likelihood that they will not have to pay ex-post for the default of the other two members. For example, the shareholders of CM1 and CM3 will not care about the liability for the capital calls to absorb the losses from the default of CM2, if CM1 and CM3 are also insolvent. Their shareholder value is wiped out in either case. Moreover, the capital calls can even induce the insolvency of CM1 and CM3. Such a strategy will ensure that clearing members will benefit from the CCP insurance through reduction of the cost of credit, while only having to contribute to a portion of the co-insurance mechanism. Such reasoning can be captured by the acronym 'IBG-YBG' – 'I'll be gone, You'll be gone'.

To be clear, clearing members will not want the ex-ante contributions to be reduced to zero, but will weigh an additional unit of ex-ante contributions against the marginal benefit in the amount of ex-post liability. For example, conservative margin and default fund contributions sizing can ensure that other clearing members have appropriate risk management standards in place. This reduces ex-post liability for non-systemic defaults due to internal risk management failures of other clearing members. This idea is confirmed for example by a recent call from clearing members and clients to increase the sizing of the default fund to a minimum 'Cover 2'.<sup>37</sup> The only claim made here is that the amount of ex-ante contributions

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<sup>36</sup> Angela Armakolla and Jean-Paul Laurent, 'CCP Resilience and Clearing Membership' [www.ssrn.com/abstract=2625579](http://www.ssrn.com/abstract=2625579) accessed 21 October 2017.

<sup>37</sup> Allianz Global Investors and others, 'A Path Forward For CCP Resilience, Recovery, and Resolution' (2020) [www.jpmorgan.com/content/dam/jpm/cib/complex/content/news/a-path-forward-for-ccp-resilience-recovery-and-resolution/pdf-0.pdf](http://www.jpmorgan.com/content/dam/jpm/cib/complex/content/news/a-path-forward-for-ccp-resilience-recovery-and-resolution/pdf-0.pdf) accessed 16 May 2020.

desired by clearing members will be lower than the amount required from a systemic risk perspective. In other words, clearing members have incentives to correctly manage non-systemic defaults through ex-ante risk management, but have suboptimal incentives when it comes to the management of more system-wide distress.

A second reason why the expected costs borne by the owner-clearing members might be lower is the possibility that the government will intervene to prevent systemic consequences. Clearing members might expect a government bail-out of the CCP in the case of a systemic failure *before* all the resources in the waterfall and the CCP capital are exhausted. The correlation of the defaults of clearing members – as discussed – increases the likelihood that the government will judge the situation serious enough to intervene. Indeed, it is not unlikely that the government will step in to cushion the consequences of a clearing member default to prevent subsequent defaults of other clearing members. The extension of the lender-of-last-resort facilities to CCPs by the central banks creates a similar distortion of incentives.<sup>38</sup> More specifically, it reduces the incentives of the CCP to invest its financial resources in liquid assets with little exposure to market and credit risk. Unless the government (explicit or implicit) guarantee is perfectly priced through regulatory tax, the likely availability of government assistance will allow the clearing members to externalise part of the losses upon the government. In the previous example, it is likely that the government will intervene before the default of CM1 and CM3, because it fears the systemic consequences. Clearing members are often the large commercial and investment banks and failure of such institutions can result in serious disruptions in the financial market.

As a result of the above-described incentives, owner-clearing members will have suboptimal incentives to invest in ex-ante default prevention to avoid losses from clearing member default with system-wide consequences, increasing the importance of post-default mechanisms. Such strategy can have a negative impact on financial stability. Ex-post mechanisms to absorb default losses can prove destabilising. For example, capital calls put additional pressure on the other clearing members in distressed times. Excessive reliance on capital calls could therefore encourage the collapse of significant parts of the financial system at the same time. In addition, given the likelihood of government assistance, shareholders have incentives to push the CCP to become too-

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<sup>38</sup> More specifically, on 29<sup>th</sup> of March 2015, the ECB and the Bank of England announced that they will consider providing liquidity support to CCPs if necessary. This is now formalised under the Sterling Monetary Framework ('SMF').

big-to-fail, since it will allow them to externalise the costs of default onto the taxpayers.

## **2.2 Perverse incentives in the non-user-owned model**

Non-user-owned CCPs have likely even worse perverse incentives than user-owned CCPs to generate systemic externalities. This is because the owners of non-user-owned CCPs are not liable beyond their initial equity investment in the case of a default and, as a result, will not bear a large part of the possible systemic losses resulting from such a default. Consequently, CCPs advocating the interests of non-user-owners have incentives to reduce the costs of the clearing business in order to maximise profits and, therefore, to reduce the investment in ex-ante reduction of the probability of clearing member default with systemic consequences. Clearing members have no incentives to monitor such opportunistic behaviour of the CCP and will even encourage it, as they profit from the lower costs of the clearing business. The reasoning goes as follows.

When the owners want to maximise the profits, e.g. in the case of ownership by profit-seeking diversified shareholders, they will want to increase the volume of their trades to increase fee income. Assuming CCPs operate in a competitive market, as encouraged by the Markets in Financial Instruments Directive reforms ('MiFID II')<sup>39</sup>, CCPs will want to lower the fees charged, because in a competitive market clearing members will choose those CCPs in which the fees are lowest. In order to lower the costs of clearing, CCPs might be tempted to reduce the amount of margin and default fund contribution. As a result, the CCP will increase its exposure to clearing member default.

The CCP's profit-seeking owners will not bear a large part of the possible systemic losses resulting from such a default, as they benefit from limited liability. Unlike owners in user-owned CCPs, owners in non-user-owned CCPs enjoy full limited liability.<sup>40</sup> The classic shareholder moral hazard remains standing, as shareholders profit from most of the upside of risky behaviour, but are not liable beyond their initial investment in the case of a default.

This shareholder moral hazard is strengthened due to the aforementioned correlation between the defaults of the clearing members, as the correlation makes it more likely that the CCP will be bankrupt when it is

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<sup>39</sup> Among other things, MiFID II aims to improve the competition between trading and clearing platforms through mandating non-discriminatory access to trading venues and CCPs.

<sup>40</sup> See also Griffith (n 35) 1209.

called upon to pay in the co-insurance mechanism. EMIR, for example, requires that the default fund and the CCP's own dedicated resources should be able to withstand the default of at least their two largest members.<sup>41</sup> Correlation between clearing member defaults increases the probability that two or more clearing members will default at the same time and that the resources will not be sufficient to cover the losses. For example, the CCP has to provide enough resources to cover the default of CM1 and CM2. However, the defaults of CM1, CM2, CM3 are correlated. When CM1 and CM2 default, CM3 is also more likely to default. In such scenario the CCP will not have enough resources and can default. The shareholders will not care, since, in the case of insolvency, their equity share is wiped out anyway. On the contrary, the profits from reducing ex-ante costs in the form of increased income from fees during solvent times will be higher due to correlation because the CCP is not likely to become liable under the co-insurance when the CCP is solvent. Indeed, when clearing member defaults are correlated, the scenario that one clearing member defaults is less likely to occur.

The CCP is unlikely to be heavily restricted through intervention by its contractual constituencies, as the main contractual constituencies of CCPs are the clearing members, who – as shown above – have perverse incentives to reduce ex-ante prevention of liability themselves. Clearing members in the non-user-owned model have little incentives to monitor such behaviour of the CCP in order to prevent systemic failure and, furthermore, will also want to push their liability for default towards states of the world where they are no longer solvent by reducing the ex-ante costs of the CCP co-insurance mechanism. In such a scenario they can externalise the costs on society. To the extent that clearing members are the large publicly traded commercial and investment banks that operate under the shareholder value maximisation paradigm themselves, clearing members might have strong incentives to try to increase shareholder profits through the reduction of these clearing costs.<sup>42</sup> Moreover, when clearing members also benefit from explicit or implicit government guarantees, their creditors (e.g. their clients) will have no incentives to prevent such risky behaviour by the clearing member.

Again, such perverse incentives of both the CCP shareholders and the clearing members will impact systemic risk, much in the same way as in the case of the user-owned model. In particular, it will encourage increased reliance on ex-post mechanisms to absorb losses due to clearing member

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<sup>41</sup> Art. 43 (2) EMIR.

<sup>42</sup> For the OTC derivatives market, for example, the largest US-based derivatives dealers are all publicly traded companies (as of June 30, 2010: Bank of America, Citigroup, Goldman Sachs, JPMorgan Chase, and Morgan Stanley), see David Mengle, 'Concentration of OTC Derivatives among Major Dealers' [2010] ISDA Research Notes 1, 1.



defaults, resulting in additional pressure on the non-defaulting clearing members in distressed times. This can have destabilising consequences. In addition, non-user-owned CCPs might have incentives to overly rely on clearing member capital calls in order to protect the CCP's capital, even if this means allocating losses to systemically important clearing members who are already experiencing distress. Furthermore, CCPs have incentives to become too-big-to-fail, since it will allow their owners to externalise part of the ex-post liability on the taxpayers in the case of a government intervention.

The above analysis assumes that the non-user-owners have profit-maximising incentives. However, this is not necessarily the case. For example, when the non-user-owned CCP is controlled by an exchange, the exchange might not want to increase the profits at the level of the CCP, as the investment in the CCP might only be a means to improve the services provided at the level of the exchange. However, the incentives discussed above could be extrapolated. For example, an exchange is subject to the same competitive pressure to reduce the costs of trading in order to attract customers. As a result, it will also want to reduce the cost of the clearing services it provides to its customers in order to increase the competitiveness of the package of services they provide.

Moreover, it might be that a competitive market – as envisioned by MiFID II – does not fully materialise for CCPs. Indeed, CCPs operate in an environment with strong network effects. For instance, the advantages of netting of trades increases when more trades are cleared through the same CCP. Such an environment typically leads to players acquiring dominant positions in the respective niche markets. We indeed see such dynamics at play in the CCP market. CCPs tend to specialise in particular products and develop market power in that particular product market. However, the incentives of non-user-owned CCPs operating in such an environment are not necessarily aligned with prudential goals either. Initially, CCPs are likely to set low prices in order to gain market share in a new market. Once market power is acquired, weak product market competition could lead to lower risk management standards. This is especially the case when the CCP is too-big-to-fail. In a consolidated market such a status becomes increasingly likely because consolidation increases the critical function – and therefore the lack of substitutability – of a CCP.

### **2.3 Perverse incentives in the hybrid model**

The hybrid model combines the incentives of clearing members owners and non-clearing members owners. The combination of users and non-

users does not reduce perverse incentives in CCPs, as both clearing members and non-users independently have perverse incentives to reduce ex-ante liabilities for default and increase the incidence of systemic externalities. However, the hybrid model suffers from heterogeneity among owners, which adds another layer to the analysis.

By way of example, the paper looks at the incentives within LCH, which is partly owned by its clearing members and in which the London Stock Exchange has a majority share. The ownership structure of LCH will lead to perverse incentives of the shareholders for at least three reasons. Firstly, the London Stock Exchange is publicly traded and will try to maximise its own shareholder value. Lower costs of clearing (e.g. by reducing ex-ante default contributions) will improve the competitiveness of the package of services that they can provide to their own customers, increasing their profits. Secondly, as non-users, exchanges are not liable for a default beyond their equity stake in the CCP and, therefore, will not bear a huge part of the possible systemic losses resulting from reduced investment in ex-ante prevention of default liability. Moreover, provided the loss of the equity stake in the case of CCP default is not so important to the exchange's balance sheet that it could lead to failure of the exchange itself, the creditors of the exchange will not care about such risky behaviour at the CCP level and will not monitor such behaviour. Of course, the London Stock Exchange might suffer from reputational damage, if it turned out they ultimately profited from increasing the systemic externalities generated by CCPs. Thirdly, the mix of users and non-users will result in a heterogeneity of shareholders' interests, which could lead to non-user-shareholders foisting the costs of a clearing member default on user-shareholders. This is especially problematic when a non-user controlling shareholder is present. Such a controlling stake might allow the non-user-shareholders to abuse their position to shift costs of excessive risk-taking to minority user-shareholders. As discussed above, clearing members are often the big commercial and investment banks that are systemically relevant and are, therefore, not the ideal institutions to locate losses. This could for example be problematic – post-default – when non-user owners might have incentives to overly rely on clearing member capital calls in order to protect their own interests. Again, these incentives can have a negative impact on systemic stability. In order to lower the costs of clearing, shareholders have incentives to reduce ex-ante default contributions, increasing the likelihood of destabilising loss allocations post-default. They have incentives to become too-big-to-fail, as it will allow shareholders to externalise part of the ex-post liability on the taxpayers in the case of a government intervention.

## 2.4 Conclusion

All three ownership models create perverse incentives for suboptimal investment in ex-ante default prevention. This increases the importance of post-default mechanisms, such as capital calls, VMGH or forced allocation of contracts to non-defaulting clearing members. The use of ex-post mechanisms by CCPs can have a negative impact on systemic risk for three reasons, which we find to a greater or lesser extent in all three ownership models. First, ex-post mechanisms can be destabilising. This is particularly the case when ex-post mechanisms put additional pressure on other clearing members in times of crisis. In non-user-owned CCPs and in CCPs with a hybrid ownership model with a controlling stake for non-users, there are strong incentives to use ex-post mechanisms that rely on the clearing members' capacity to absorb losses (e.g. capital calls) in order to protect the CCP's capital, even if this means allocating losses to systemically important clearing members who are already experiencing distress. Second, prudent default management requires a careful assessment of the impact of the use of default management mechanisms on the system as a whole. CCPs might not necessarily have access to the necessary information to make such assessments in times of stress. Third, given the likelihood of government assistance, CCPs under all three ownership models have incentives to become too-big-to-fail, since it will allow them to externalise the costs of default onto the taxpayers. In sum, we find perverse incentives to generate systemic risk under all three ownership models. These incentives are the strongest in CCPs where non-user owners have a controlling stake.

To be clear, the EU regulators have accompanied the CCP mandate with substantial prudential regulation. However, the prudential requirements under EMIR leave some discretion to CCPs with respect to the size of the financial resources as well as how much of the waterfall to allocate to pre-default contributions and post-default contributions. More specifically, EMIR only provides some minimum amounts with regard to pre-default funds and leaves the final responsibility with the CCP for developing the models to calculate the amount of margin requirements<sup>43</sup>, the amount of default fund contribution<sup>44</sup>, the amount of dedicated own resources<sup>45</sup>, and the amount of equity<sup>46</sup>. The technical standards adopted by the commission formulate some additional guidance regarding the calculations.<sup>47</sup>

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<sup>43</sup> Article 41 EMIR.

<sup>44</sup> Article 42 EMIR.

<sup>45</sup> Article 43 EMIR.

<sup>46</sup> Article 16 EMIR.

<sup>47</sup> 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 standards on requirements for central counterparties.

Such incompleteness is unavoidable, as uniform prescriptions regarding financial resources – if even possible – would conflict with the unique risk profile of each CCP.<sup>48</sup> Moreover, the calculation of the resources necessary often depends on intimate and very variable information regarding the portfolios cleared, placing the lawmaker at an information disadvantage compared to CCPs. Take the example of the calculation of the cover 2 requirement under EMIR, which requires that the default fund and the dedicated resources cover at least the default of the two clearing members to which the CCP has the largest exposure.<sup>49</sup> In order to calculate the cover 2 requirement, CCPs construct a range of unfavourable historical (e.g. the 2008 credit crisis,) or hypothetical market scenarios and subject the portfolios to be stressed to these scenarios in order to determine the financial impact of each scenario. The calculation of the cover 2 requirement is therefore determined by both the stress scenario constructed as well as the portfolios stressed. Where the former tends not to change on a day-to-day basis or be CCP-specific, the portfolios cleared are very volatile and unique to each CCP. As a result, the challenge lies in ensuring that the stress tests are genuinely representative for the portfolios the CCP clears. To be clear, the scenarios used should not be entirely static either and need to be adjusted to newly identified vulnerabilities.<sup>50</sup>

### **3. A NEED FOR A RE-EVALUATION OF SHAREHOLDER PRIMACY FOR CCPs**

The incompleteness of the prudential requirements emphasizes the importance of the governance framework in CCPs to ensure that managers take decisions that safeguard their long-term financial stability. In this context, the perverse incentives of shareholders in the three ownership models cast doubt on the appropriateness of the shareholder primacy paradigm for CCPs. However, EMIR fails to address this issue. EMIR does provide some CCP-specific governance rules that tweak the national corporate governance systems<sup>51</sup> where

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<sup>48</sup> JP Morgan, 'A Balancing Act – Aligning Incentives through Financial Resources for Effective CCP Resilience, Recovery and Resolution' [2017] Office of Regulatory Affairs 1; David Murphy and Paul Nahai-Williamson, 'Dear Prudence, Won't You Come out to Play? Approaches to the Analysis of Central Counterparty Default Fund Adequacy' [2014] Financial Stability Paper 1.

<sup>49</sup> The default fund and the dedicated resources set aside by the CCP should cover, under extreme but plausible market conditions, at least the default of the two clearing members to which the CCP has the largest exposure, see art. 43 (2) EMIR.

<sup>50</sup> For a more detailed explanation of the calculation of the cover 2 requirement, see Murphy and Nahai-Williamson (n 48) 5–6.

<sup>51</sup> The preamble of the Commission Delegated Regulation (EU) No 153/2013 makes clear that the governance arrangements in EMIR should be interpreted from within the different corporate law regimes in the member states, see (9) Commission Delegated Regulation (EU) No 153/2013 of 19 December 2012 supplementing Regulation (EU)

considered necessary to ensure compliance with regulation. These new governance rules, however, fail to appreciate the exact nature of the perverse incentives created by the CCP's governance framework. Indeed, EMIR places the final responsibility for the risk management with the board of directors, which in a shareholder-oriented national corporate governance framework will monitor the management on behalf of the shareholders.<sup>52</sup> EMIR does little to change the (financial) incentives of directors and managers provided by national shareholder-oriented corporate governance frameworks. Although EMIR requires CCPs to have independent directors on the board<sup>53</sup>, independence mostly does not mean independence from shareholders.<sup>54</sup> Indeed, as indicated by the definition in EMIR, directors are considered independent when they have no relationship 'that raises a conflict of interest regarding the CCP concerned or its controlling shareholders, its management or its clearing members'.<sup>55</sup> No independence from shareholders as a class is required. For example, in many corporate governance regimes independent directors can be still removed by shareholder vote.<sup>56</sup> Furthermore, although it is true that EMIR prohibits the compensation of independent and non-executive directors from being linked to the performance of the business, only one third of the board needs to be an independent director.<sup>57</sup> Performance-related compensation for other board members is allowed. These latter board members are in the majority and could put pressure on the independent directors, especially when they are motivated by large financial incentives to pursue shareholder interest.<sup>58</sup>

EMIR does insert loose obligations to consider the interests of other stakeholders. More specifically, EMIR requires CCPs to put processes in place that ensure accountability to stakeholders.<sup>59</sup> It is the board

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No 648/2012 of the European Parliament and of the Council with regard to regulatory technical standards on requirements for central counterparties.

<sup>52</sup> See Art. 4 (4) 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 standards on requirements for central counterparties.

<sup>53</sup> Art. 27 (2) EMIR.

<sup>54</sup> As such, this is not surprising given that independent directors' very conception was as a watchdog for shareholders as a class.

<sup>55</sup> Art. 2 (28) EMIR.

<sup>56</sup> John Armour and others, *The Anatomy of Corporate Law: A Comparative and Functional Approach* (Oxford University Press 2017) 85.

<sup>57</sup> Art. 27 (2) EMIR.

<sup>58</sup> Along the same lines, Griffith argues against the independence requirement for directors of CCPs imposed by rules of the CFTC and the SEC, if only because – compared to normal firms – it is unclear what constituency independent directors must protect, as 'most interested private parties do not have an adequate incentive to solve the systemic risk problem', see Griffith (n 35) 1221–1226.

<sup>59</sup> Art. 3(1)(g) Commission Delegated Regulation (EU) No 153/2013 of 19 December 2012 supplementing Regulation (EU) No 648/2012 of the European Parliament and of the

that is assigned the responsibility for providing accountability to ‘the shareholders or owners and employees, clearing members and their customers and other relevant stakeholders’.<sup>60</sup> However, such a broad responsibility is likely to be too vague to have any impact, especially when operating in a national corporate governance framework that provides strong (financial) incentives for the board to pursue the interests of shareholders. The preamble of EMIR is a bit more specific regarding which stakeholders should be considered by stating that ‘clearing members and clients need to be adequately represented’.<sup>61</sup> This is operationalised by, for example, requiring that the risk committee needs to consist of representatives of clearing members, independent directors, and representatives of clients.<sup>62</sup> As discussed above, clearing members have suboptimal incentives to invest in ex-ante default prevention to avoid losses from clearing member default. Such strategy increases the importance of post-default mechanisms, which can have a negative impact on financial stability. As a result, including clearing members’ incentives in the risk governance framework is counter-productive from a systemic risk perspective.

In sum, the corporate governance regime in EMIR does not tackle the perverse incentives identified in the three ownership models. This paper therefore argues that reducing the accountability of managers to shareholders could help gain traction to reduce systemic risk in CCPs in line with the current trend of re-evaluating the shareholder primacy paradigm.

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Council with regard to regulatory technical standards on requirements for central counterparties.

<sup>60</sup> Art. 7(2)(h) 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 standards on requirements for central counterparties.

<sup>61</sup> Preamble (61) EMIR.

<sup>62</sup> Art. 28 (1) EMIR.