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# THE TRILLION DOLLAR QUESTION: CAN A CENTRAL BANK BAIL OUT A CENTRAL COUNTERPARTY CLEARING HOUSE WHICH IS “TOO BIG TO FAIL”?

*Christian Chamorro-Courtland\**

## INTRODUCTION

I have previously argued in my Article, *Central Counterparties and the New Transnational Lex Mercatoria*,<sup>1</sup> that the new transnational lex mercatoria is the main source of law governing the operations of central counterparties (CCPs or singularly CCP). It is a legal framework which recognizes that the customs, practices, and usages of CCPs are a legally binding source of law.

That is to say, CCPs have operated as self-regulatory organizations (SROs) and have developed their own operations for risk management and default procedures by altering and adapting their customs and practices over the past several decades. Adhering to this framework, courts in various common law jurisdictions have enforced these customs and practices as legally binding between participants of the clearing system.

I have suggested that “the lex mercatoria should remain the primary source of law governing CCP arrangements because it has worked successfully for decades and there has never been a major CCP failure.”<sup>2</sup> This sentiment that CCPs can privately regulate their own operations is supported by various academics. For example, Randall Kroszner wrote:

*Market forces* led to important innovations and the resulting structures, particularly in the futures markets, have appeared to have performed reasonably well . . . . The lessons of the developments in the derivatives markets suggest that competitive forces have and can *control risk* in ways that can address public regulators’ concerns about safety and soundness of the *payments and clearing system*.<sup>3</sup>

Furthermore, Joanne Braithwaite argues that CCP clearing “can be understood as a market-generated ‘legal-device.’”<sup>4</sup> Policy-makers and

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1. Christian Chamorro-Courtland, *Central Counterparties and the New Transnational Lex Mercatoria*, 10 FLA. ST. U. BUS. REV. 57 (2011) [hereinafter *Lex Mercatoria*].

2. *Id.* at 58–59.

3. Randall S. Kroszner, *Can the Financial Markets Privately Regulate Risk?: The Development of Derivatives Clearinghouses and Recent Over-the-Counter Innovations*, 31 J.MONEY, CREDIT & BANKING 598, 614–15 (1999) (emphasis added).

4. Joanne P. Braithwaite, *Private Law and the Public Sector’s Central Counterparty Prescription for the Derivatives Markets* 3 (London Sch. Econ. & Pol. Sci. L. Dept., LSE, L., Soc’y. & Econ. Working Papers 2/2011).

financial regulators around the globe are currently debating how the financial markets should be reformed in order to address a variety of problems encountered during the 2007–2010 global financial crisis. Braithwaite argues “that within these debates greater recognition should be paid to the fact that CCP clearing is first and foremost a *private sector legal device*, constructed from private law techniques to serve the market.”<sup>5</sup>

The purpose of the reforms that are being implemented as part of the G20 Pittsburgh initiative<sup>6</sup> is to increase safety, soundness, and financial stability in the global financial markets. The research presented in this Article, however, demonstrates that the financial legislative reforms will change the nature of CCP operations and could alter their incentives in the future. After the new reforms are implemented at the domestic level, CCPs will no longer have the ability or the necessary incentives to self-regulate their operations and risk management procedures.<sup>7</sup>

Previously, CCPs demonstrated that they have adequate default procedures to cover the insolvency of one or more large clearing members; however, other risks could potentially cause a CCP which is “too big to fail” to become insolvent.<sup>8</sup> Therefore, it is argued that CCPs require support from the central bank from the jurisdictions from within which they are operating. Clearing and settlement systems experts agree that CCPs should have direct access to central bank liquidity.<sup>9</sup>

Part I of this Article explains the purpose and functions of CCPs. Part II discusses the significance of CCPs and their inherent risks. Part III describes the default procedures typically used by CCPs. Part IV analyzes

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5. *Id.* at 26 (emphasis added).

6. THE G20 PITTSBURGH SUMMIT PRESS ROOM, <http://www.g20pittsburghsummit.org> (last visited Feb. 13, 2012).

7. In other words, the new transnational lex mercatoria probably does not apply to financial market CCPs that are systemically important. The new transnational lex mercatoria, however, will continue to be the relevant legal regime for non-financial market CCPs that do not create systemic risk. See Christian Chamorro-Courtland, *The Legal Aspects of Non-Financial Market Central Counterparties (CCP): A Case Comment on IATA v. Ansett*, 27.4 BANKING & FIN. L. REV. (forthcoming spring 2012).

8. Bob Hills, David Rule, Sarah Parkinson & Chris Young, *Central Counterparty Clearinghouses and Financial Stability*, FIN. STABILITY REV., June 1999, at 131–33.

9. The ECB argued that CCPs should “have access to central bank liquidity in the currency in which the products cleared are denominated.” EUROPEAN CENTRAL BANK, CREDIT DEFAULT SWAPS AND COUNTERPARTY RISK 51 (2009), available at <http://www.ecb.int/pub/pdf/other/creditdefaultswapsandcounterpartyrisk2009en.pdf>. It has also been suggested in a Bank for International Settlements publication that “CCPs may require public sector support.” Stephen G. Cecchetti, Jacob Gyntelberg & Marc Hollanders, *Central Counterparties for Over-the-Counter Derivatives*, BIS QUARTERLY REV., Sept. 2009, at 45, 55. Furthermore, Xavier Role, the CEO of the London Stock Exchange, suggests that “central banks should have at least a funding relationship to clearing houses.” Jeremy Grant, *Call For Central Banks to Regulate Clearing Houses*, FIN. TIMES, Dec. 29, 2009, <http://www.ft.com/intl/cms/s/0/f10b9be2-f419-11de-ac55-00144feab49a.html#axzz1rN5h6xya> (quoting Xavier Role). See also Jeremy C. Kress, *Credit Default Swaps, Clearinghouses, and Systemic Risk: Why Centralized Counterparties Must Have Access to Central Bank Liquidity*, 48 HARV. J. ON LEGIS. 49, 79 (2011).

the legal powers of central banks. Part V analyzes the legal nature of central bank liquidity assistance to CCPs. Part VI analyzes the law and the specific financial regulatory reforms implemented at the domestic level in the United States, Canada, the Euro-zone (including France and Germany), Sweden, and the United Kingdom. Part VII will take a look at some of the facilities that a central bank may have at its disposal to bail out an insolvent CCP and considers whether CCPs that clear credit default swaps can receive emergency liquidity assistance. Finally, Part VIII analyzes whether a central bank should bail out a central counterparty that clears credit default swaps.

## I. WHAT IS A CENTRAL COUNTERPARTY?

A CCP clearing system is a *sui generis* financial risk management institution that operates by interposing itself between a group of merchants, known as clearing members, who have contractually entered into the CCP scheme in order to clear financial transactions they had previously initiated. The clearing<sup>10</sup> process gives rise to rights and obligations between the clearing members and the CCP.

Through either *open offer* or *multilateral netting by novation and substitution*, the CCP assumes the contractual rights and obligations of the clearing members as the principal in order to guarantee the performance of each and every clearing member. This process, counterparty substitution,<sup>11</sup> aims to redistribute counterparty risk<sup>12</sup> by mutualizing any default losses among all clearing members and the CCP. In the context of the financial markets, the CCP interposes itself between a group of institutional market participants who have entered into market transfer orders with each other for financial contracts traded in one or more financial markets. The counterparty substitution process involves the CCP “becoming the seller to

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10. Clearing is “the process of transmitting, reconciling and, in some cases, confirming payment orders or security transfer instructions prior to settlement, possibly including the netting of instructions and the establishment of final positions for settlement.” COMMITTEE ON PAYMENT & SETTLEMENT SYS., A GLOSSARY OF TERMS USED IN PAYMENTS AND SETTLEMENT SYSTEMS, 13 (Mar. 2003) [hereinafter CPSS GLOSSARY], available at <http://www.bis.org/publ/cpss00b.pdf>.

11. See generally Christian Chamorro-Courtland, *Counterparty Substitution in Central Counterparty (CCP) Systems*, 26 BANKING & FIN. L. REV. 517 (2011) [hereinafter *Counterparty Substitution*]. It should be noted that the terms “clearing house” and “CCP” are legally distinct and should not be used interchangeably. An ordinary clearing house operates as the *agent* of the clearing members in the clearing process and does not perform counterparty substitution. The type of clearing performed by an ordinary clearing house is known as “position netting,” which does not involve any novation or substitution of any kind. Therefore, unlike a CCP, which operates as the *principal* to every transaction entered into by the clearing members, an ordinary clearing house remains an agent and does not assume liability for any of the transactions it clears.

12. Credit risk or exposure is the “the risk that a counterparty will not settle an obligation for full value, either when due or at any time thereafter.” CPSS GLOSSARY, *supra* note 10, at 17. This risk includes “replacement cost risk.” *Id.*

the buyer and the buyer to the seller.”<sup>13</sup> The CCP, in effect, guarantees the termination of any position in fungible contracts with standardized terms that any of the clearing members may desire.

A CCP’s main operations involve risk management (which includes default procedures), clearing and settlement, and collateral arrangements. CCPs were initially used in derivatives exchanges; however, due to the significant benefits they confer to their members and the financial markets they clear for, CCPs have increasingly been introduced into securities exchanges, over-the-counter (OTC) markets, and repurchase (repo) agreement markets.

The legal and economic benefits of CCPs are exemplified in the mitigation of certain risks<sup>14</sup> inherent in clearing systems and reduction of costs. CCPs are relatively new and increasingly important market infrastructure institutions which are not yet fully understood; consequently, they require legal analysis to avoid legal risk<sup>15</sup> and ensure their proper functioning. A crucial requirement for their operations is “a well founded, *transparent* and *enforceable* legal framework for each aspect of its activities in all relevant jurisdictions,”<sup>16</sup> thereby providing *legal certainty* to the system operators and participants. This Article aims to elucidate the legal aspects of a CCP’s default procedures and the legal powers of central banks with respect to systematically important, insolvent CCPs.

## II. WHY WOULD A CENTRAL COUNTERPARTY REQUIRE A BAILOUT FROM A CENTRAL BANK?

Systemically important CCPs clear and settle<sup>17</sup> millions of transactions on a daily basis that are worth trillions of dollars, pounds, and euros. For example, Chicago Mercantile Exchange Group (CME or CME Group) “handled 2.2 billion contracts in 2006 with an average notional value of \$4.1 trillion per day.”<sup>18</sup> In 2007, the Depository Trust Clearing Corporation

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13. The Task Force on Securities Settlement Systems, which was established by the Committee on Payment and Settlement Systems (the CPSS) of the central banks of the Group of Ten countries and the Technical Committee of the International Organization of Securities Commissions (the IOSCO), prepared a report with recommendations for CCPs. TASK FORCE ON SEC. SETTLEMENT SYS., RECOMMENDATIONS FOR CENTRAL COUNTERPARTIES 6 (2004) [hereinafter RCCP]. This was done under the auspice of the Bank for International Settlements (the BIS). *Id.* at iii.

14. These risks are counterparty credit risk, systemic risk, settlement bank risk, custody risk, liquidity risk, investment risk, legal risk, and operational risk. *Id.* at 8.

15. Legal risk is “the risk of loss because of the unexpected application of a law or regulation or because a contract cannot be enforced.” CPSS GLOSSARY, *supra* note 10, at 29.

16. RCCP, *supra* note 13, at 4 (emphasis added).

17. Settlement is “an act that discharges obligations in respect of funds or securities transfers between two or more parties.” CPSS GLOSSARY, *supra* note 10, at 45.

18. This equated to an annual average of more than \$1,000 trillion. CME GROUP, REACH YOUR VISION 8 (2007), available at [http://www.cmegroup.com/company/files/CME\\_cap\\_brochure\\_printer\\_finals.pdf](http://www.cmegroup.com/company/files/CME_cap_brochure_printer_finals.pdf).

(DTCC) netted \$1.860 quadrillion in securities transactions.<sup>19</sup> In 2008, the DTCC settled \$1.880 quadrillion in transactions across a range of asset classes.<sup>20</sup> Therefore, the failure of a systemically important CCP could have catastrophic impact on global financial markets. Accordingly, an insolvent CCP may require emergency access to central bank liquidity in order to avoid the spread of systemic risk and the meltdown of global economies.

CCPs are risk management institutions. Their risk management functions are designed to neutralize counterparty risk if a clearing member becomes insolvent. In theory, proper risk management standards and default procedures should be sufficient to prevent a CCP from becoming insolvent. In reality, there is a list of factors which could cause a CCP to become insolvent besides counterparty exposure, such as central clearing risk.

CCPs can become insolvent for various reasons including operational risks, moral hazard, adverse selection, unforeseen risks (such as financial innovation), interconnectedness to other large market infrastructure institutions (such as exchanges and central securities depositories, which are also operating in the financial system), mandatory clearing (which can cause high risk concentrations), and a liquidity crisis. Therefore, the real possibility of a systemically important CCP becoming insolvent requires a central bank to have a *discretionary* legal power to provide it with access to emergency liquidity.

#### **A. OPERATIONAL RISKS**

Operational risks could arise from a technological or human error. This is “the risk of human error or a breakdown of some component of the hardware, software or communications systems that are crucial to settlement.”<sup>21</sup> These types of unexpected events can cause a systemically important CCP to become insolvent.

For example, the CME Group held around \$4 billion in margin funds on behalf of Lehman Brothers Holding Inc. (Lehman) when it became insolvent on September 15, 2008.<sup>22</sup> This margin was sufficient to cover Lehman’s obligations to the CME, and the CCP did not suffer any loss.<sup>23</sup> Furthermore, the CME Group had more than sufficient financial resources to draw on at the time (approximately \$95 billion).<sup>24</sup>

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19. *DTCC Settles Record \$1.8 Quadrillion in 2007*, THE DEPOSITORY TRUST & CLEARING CORP. (DTCC) (Mar. 25, 2008), [http://www.dtcc.com/news/press/releases/2008/record\\_settlements.php](http://www.dtcc.com/news/press/releases/2008/record_settlements.php).

20. Michael Mackenzie, *DTCC Looks for Central Role in Clearing Trades*, FIN. TIMES, June 30, 2009, <http://www.ft.com/cms/s/0/85e284a0-65a0-11de-8e34-00144feabdc0.html#axzz1q3XrhoCS>.

21. CPSS GLOSSARY, *supra* note 10, at 36.

22. See PETER NORMAN, THE RISK CONTROLLERS: CENTRAL COUNTERPARTY CLEARING IN GLOBALISED FINANCIAL MARKETS 39–40 (2011).

23. *See id.*

24. *See id.*

An expert report on the insolvency of Lehman, published by Anton Valukas on March 13, 2010, subsequently revealed that CME lost \$1.2 billion of Lehman's margin by forcing Lehman to sell the collateral at a loss through CME's auction facility.<sup>25</sup> These losses raised a number of questions about the effectiveness of CME's ability to handle the default of a large clearing member. It also raised concerns about a CCP's ability to handle the insolvencies of multiple clearing members simultaneously.<sup>26</sup>

### B. MORAL HAZARD AND ADVERSE SELECTION

The main concern is that the related problems of moral hazard and adverse selection can arise if a central bank has the legal power to bail out a systemically important CCP that becomes insolvent. Moral hazard refers to a situation in which

a party makes a decision about how much risk to take, while another party bears the costs if things go badly, and the party insulated from risk behaves differently from how it would if it were fully exposed to the risk. .

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Economists explain moral hazard as a special case of *information asymmetry*, a situation in which one party in a transaction has more information than another. In particular, moral hazard may occur if a party that is insulated from risk has more information about its actions and intentions than the party paying for the negative consequences of the risk. More broadly, moral hazard occurs when the party with more information about its actions or intentions has a tendency or incentive to behave inappropriately from the perspective of the party with less information.<sup>27</sup>

Moral hazard can arise at two levels in a CCP clearing arrangement. First, CCPs provide a *sui generis* insurance function to their members by mutualizing and redistributing the losses arising from the default of a clearing member. This redistribution of risk might encourage some market participants and clearing members to take on excessive risks. According to Craig Pirrong, “[c]learing tends to reduce the costs that riskier firms incur to trade relative to the costs incurred by lower risk firms, thereby allowing the riskier to expand their trading activity relative to the low risk.”<sup>28</sup>

Moral hazard raises the related problem of adverse selection, which arises when there is information asymmetry and “the insured party knows

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25. Report of Anton R. Valukas, Examiner, *In re Lehman Bros. Holding, Inc.*, No. 08-13555 (JMP) (Mar. 11, 2010), available at <http://lehmanreport.jenner.com/>.

26. See NORMAN, *supra* note 22, at 40.

27. *Moral Hazard*, WIKIPEDIA, [http://en.wikipedia.org/wiki/Moral\\_hazard](http://en.wikipedia.org/wiki/Moral_hazard) (last visited Feb. 15, 2012) (emphasis added).

28. Craig Pirrong, *The Economics of Central Clearing: Theory and Practice*, in 1 ISDA DISCUSSION PAPERS SERIES 1, 13 (2011).



more about the risks than the insurer.”<sup>29</sup> In other words, “firms that trade derivatives know more about the risks of particular cleared products than the CCP[] . . . these firms will tend to over-trade the products for which the CCP underestimates risk, and under-trade the products for which the CCP overestimates risk.”<sup>30</sup> Accordingly, CCPs have dealt with these two problems by requiring strict membership terms for clearing members and requiring that clearing members post sufficient collateral<sup>31</sup> under the margin arrangements. Thus, clearing members are generally large financial institutions with lots of capital, and they are required to settle their exposures on a daily basis by posting margin.

Second, moral hazard can arise when a CCP believes that it will automatically receive emergency liquidity from a central bank if it becomes insolvent. This is particularly relevant if the CCP is systemically important, meaning that the CCP’s insolvency can cause systemic risk and devastating effects on the financial system. These CCPs will be considered too big to fail. Systemic risk is:

the risk that the failure of one participant in a transfer system, or in financial markets generally, to meet its required obligations will cause other participants or financial institutions to be unable to meet their obligations (including settlement obligations in a transfer system) when due. Such a failure may cause significant liquidity or credit problems and, as a result, might threaten the stability of financial markets.<sup>32</sup>

The financial reforms that were agreed to by the G20 at the Pittsburgh summit in 2009 may distort CCP incentives in the future; in turn, creating moral hazard and adverse selection. First, the legislative reforms will require standardized OTC derivatives, which were traded bilaterally before the global financial crisis, to be cleared through CCPs (mandatory clearing).<sup>33</sup> As a result, this will concentrate more risk into CCPs and will cause the creation of larger CCPs that will likely become systemically important.

Accordingly, this issue has been recognized by the U.K. House of Lords. It has noted the following regarding systemically important CCPs in

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29. *Id.* at 14.

30. *Id.*

31. Collateral is “an asset or third-party commitment that is accepted by the collateral taker to secure an obligation of the collateral provider vis-à-vis the collateral taker.” CPSS GLOSSARY, *supra* note 10, at 14. Collateral arrangements may take different legal forms, and collateral may be obtained using the method of title transfer or security interest. CAN. SEC. ADM’RS DERIVATIVES COMM., DERIVATIVES: SEGREGATION AND PORTABILITY IN OTC DERIVATIVES CLEARING 27 (2012).

32. CPSS GLOSSARY, *supra* note 10, at 48.

33. For example, see Title VII of the Dodd-Frank Act for provisions on mandatory clearing. Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), Pub. L. No. 111-203, 124 Stat. 1376 (2010) (codified in scattered sections of the U.S.C.).

its report entitled *The Future Regulation of Derivatives Markets: Is the EU on the Right Track?*:

Concerns have been raised that, if the role of CCPs is increased through increasing the number and proportion of contracts they clear, they will themselves become *systemically significant*, and that their collapse would pose a significant risk to the stability of the market as a whole. The Minister acknowledged the increasing reliance on CCPs for financial stability and noted that this made effective regulation and supervision increasingly important and noted that a CCP could collapse if there was an “extraordinary movement in prices” which left several counterparties with losses beyond existing liquidity and capital . . . LCH.Clearnet agreed that a CCP might collapse if it had “seriously miscalculated the level of risk that it had in its portfolio” and was unable to close defaulting counterparties’ positions.<sup>34</sup>

ISDA [the International Swaps and Derivatives Association] argued that “any time you focus that many financial trades through one entity, at some point it is just going to be so large and it is going to be handling such a high percentage of trades that it just, by virtue of its size, becomes systemically significant.” Increasing systemic importance of CCPs “could create the next problem potentially.”<sup>35</sup>

Second, not only has risk been concentrated, but CCPs have been subject to a recent wave of consolidations.<sup>36</sup> CCP mergers have aimed to achieve economies of scale and reduce costs and clearing fees for their clearing members and market participants. As a result, the financial market is left with a few large CCPs that are systemically important.<sup>37</sup> Third, there has been a wave of CCP demutualizations. CCPs have changed from being user owned and nonprofit institutions to for-profit,<sup>38</sup> publicly listed companies. Demutualized CCPs have not only become larger, but more

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34. EUROPEAN UNION COMMITTEE, *THE FUTURE REGULATION OF DERIVATIVES MARKETS: IS THE EU ON THE RIGHT TRACK?*, 2009-10, H.L. 93, ¶ 125 (U.K.) [hereinafter HOUSE OF LORDS REPORT] (emphasis added).

35. *Id.* ¶ 126.

36. See generally NORMAN, *supra* note 22.

37. The House of Lords has noted that “[i]ncreasing the role of CCPs in the derivatives market increases their effect on market stability. If the number of CCPs operating in Europe falls in the future, as predicted by witnesses, this will also have the effect of increasing the systemic importance of the CCPs that remain.” HOUSE OF LORDS REPORT, *supra* note 34, ¶ 128.

38. This profit motive may cause CCPs to reduce costs in order to enlarge shareholder returns. For example, CCPs could increase profits by lowering the level of margin they request from their clearing members. A CCP could deliberately compromise its risk management standards in order to reduce costs. Since it is costly for clearing members to post collateral, financial institutions would switch to the CCP with the lowest margin levels. The resulting increase in clearing members and clearing fees at a CCP would translate into larger dividends for its shareholders.

robust as well, since they have shareholder equity as an extra layer of protection against a clearing member default.<sup>39</sup>

Overall, these factors may alter CCP incentives and introduce moral hazard in the future. Although improbable, CCPs, which know that they are too big to fail, may attempt to cut costs by compromising their risk management standards and demanding less collateral from their clearing members.

Therefore, in order to avoid moral hazard, central banks around the world should have clear discretionary power to decide whether to extend emergency liquidity to an insolvent and systemically important CCP. In addition, central banks and financial regulators should play a role in overseeing and regulating CCP operations, and ensuring that their risk management standards and default procedures are adequate to cover any losses arising from multiple clearing member defaults.<sup>40</sup>

### III. THE DEFAULT PROCEDURES

When one or more clearing members default on their obligations to the CCP, the default procedures take effect. Typically, this occurs because a clearing member has become insolvent. The default procedures close-out the defaulting member's open positions with the CCP in an orderly manner.

The default procedures include access to financial resources, which a CCP has at its disposal, in order to cover its obligations to all the clearing members upon a clearing member default. A CCP's default procedures are embedded in the clearing house arrangement. These procedures are contractually agreed to by the clearing members before they become members of the clearing system and, accordingly, will vary somewhat from CCP to CCP.

#### A. MULTILATERAL CLOSE-OUT NETTING

CCPs will close out the open positions of an insolvent clearing member through multilateral close-out netting.<sup>41</sup> Close-out netting is an advanced form of insolvency setoff that operates for executory contracts.<sup>42</sup> For this

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39. See COMM. ON PAYMENTS AND SETTLEMENT SYS. & TECHNICAL COMM. OF THE INT'L ORG. OF SEC. COMM'N, PRINCIPLES FOR FINANCIAL MARKET INFRASTRUCTURES 1-3 (Bank for Int'l Settlements and Int'l Org. of Sec. Comm'n), available at <http://www.bis.org/publ/cpss94.pdf>.

40. The House of Lords agrees on "the importance of effective regulation and supervision of CCPs." HOUSE OF LORDS REPORT, *supra* note 34, ¶ 128.

41. Close-out netting is also known as default netting, open contract netting, or replacement contract netting.

42. The terms netting and setoff are used interchangeably in the legal literature because they serve the same function. They both discharge gross claims to a single net amount. For example, if X owes \$10 to Y, and Y owes \$5 to X, then after netting or setoff, X will pay \$5 to Y. The key difference is that set-off deals with *debts*, whereas netting often deals with equivalent fungible claims under *executory contracts*. See PHILIP R. WOOD, SET-OFF AND NETTING, DERIVATIVES, CLEARING SYSTEMS 1, 5, 11 (2d ed. 2007).

process to operate properly, it requires setoff arrangements to be enforceable when one of the parties becomes insolvent.<sup>43</sup>

Close-out netting is generally triggered after a specified “default event” occurs. These events are contractually included in the clearing arrangement between all the clearing members and the CCP. Close-out netting involves a *cancellation* (a discharge or close-out) of a series of executory contracts between the clearing members and a *calculation* (i.e., netting) of the gains and losses to produce a single “net net” balance through *novation*.<sup>44</sup> This single net net balance is owed by the net net debtor to the net net creditor and it is subsequently discharged by settlement.

The close-out netting process is necessary for the CCP to be able to terminate (close out) all of the defaulter’s positions and calculate a single net amount due to or from the defaulting counterparty. It is the first step in reducing any financial exposures that the defaulting clearing member may have had open at the time of its insolvency. Therefore, it is crucial that close-out netting arrangements be enforceable in a counterparty insolvency or default.

#### B. THE “WATERFALL” OF FINANCIAL RESOURCES

The CCP should have a “waterfall”<sup>45</sup> of financial resources at its disposal in the event that one or more clearing members become insolvent. In centralized clearing, the CCP assumes liability for the clearing member’s aggregate payment and/or delivery obligations.<sup>46</sup> The mutualization of risk permits the CCP to reallocate counterparty risk amongst all the clearing members. This diversifies the risk and dilutes the loss that any individual counterparty would have to assume from a counterparty default.

In theory, the CCP assumes counterparty risk on behalf of the participants; however, in practice, the CCP is only an administrator.<sup>47</sup> It does not take on any risk itself. Instead, because the financial resources<sup>48</sup> that a CCP system uses to cover any default losses ultimately derives from collateral provided as margin by the participants, a mutual guarantee fund, the capital of strong clearing members support the system as guarantors or

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43. See generally *Counterparty Substitution*, *supra* note 11, at 517–38 (explaining the legal requirements of insolvency setoff).

44. Novation netting is implied in close-out netting. See JAN H. DALHUISEN, *TRANSNATIONAL AND COMPARATIVE COMMERCIAL, FINANCIAL AND TRADE LAW* 490 (3d ed. 2007).

45. See Pirrong, *supra* note 28, at 21.

46. The CCP assumes liability for the clearing member’s obligations through novation or open offer, which are two different forms of counterparty substitution.

47. See DALHUISEN, *supra* note 44, at 1062.

48. As of December 30, 2011, the CME Group had a \$4.5 billion financial package for safeguarding contractual performance. CME GROUP, *CME CLEARING FINANCIAL SAFEGUARDS* 9 (2012) [hereinafter *CME FINANCIAL SAFEGUARDS*], available at <http://www.cmegroup.com/clearing/files/financialsafeguards.pdf>.

owners, and insurance.<sup>49</sup> The CCP only risks its own share capital or any surplus funds it may hold.

In 2004, the Committee on Payment and Settlement Systems (CPSS) of the central banks of the Group of Ten countries and the International Organization of Securities Commissions (IOSCO) prepared a report entitled *Recommendations for Central Counterparties*.<sup>50</sup> In particular, they made the following recommendations:

Recommendation 4: Margin requirements: If a CCP relies on margin requirements to limit its credit exposures to participants, those requirements should be sufficient to cover potential exposures in normal market conditions. The models and parameters used in setting margin requirements should be risk-based and reviewed regularly.<sup>51</sup>

Recommendation 5: Financial resources: A CCP should maintain sufficient financial resources to withstand, at a minimum, a default by the participant to which it has the largest exposure in extreme but plausible market conditions.<sup>52</sup>

Recommendation 6: Default procedures: A CCP's default procedures should be clearly stated, and they should ensure that the CCP can take timely action to contain losses and liquidity pressures and to continue meeting its obligations. Key aspects of the default procedures should be publicly available.<sup>53</sup>

A CCP will typically use its financial resources to cover any resulting losses as follows:

1. The *defaulting clearing member's* margin (which includes initial margin and variation margin);
2. The *defaulting clearing member's* default fund contributions;
3. The *CCP's* own equity and financial resources;
4. Insurance;
5. The default fund contributions of *solvent clearing members*;
6. Additional contributions by *solvent clearing members*; and
7. Other financial resources, such as emergency lines of credit, and margins of the solvent customers of a defaulting clearing member (if there is an omnibus account).<sup>54</sup>

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49. These measures taken by a CCP have the effect of allocating risk *ex ante*.

50. RCCP, *supra* note 13, at iii.

51. *Id.* at 21 (emphasis omitted).

52. *Id.* at 23 (emphasis omitted). For example, the CME Group has approximately \$90 billion in financial resources to draw on as of December 30, 2011.

53. *Id.* at 27 (emphasis omitted).

54. See generally Kress, *supra* note 9 (describing the waterfall of default resources).

### C. MARGIN SYSTEMS

The clearing arrangement requires clearing members to post collateral with the CCP to limit exposures and losses in the event of a participant's default. CCPs measure exposures on a day-to-day or intraday basis by "marking-to-market" the open contracts.<sup>55</sup> This ensures that exposures do not accumulate over time and that a market participant is prohibited from deferring losses associated with its open market positions. CCPs use different models and formulas to calculate margin contributions in different markets.<sup>56</sup>

CCP systems are exposed to the counterparty risk of their clearing members. Therefore, CCPs demand margin from participants in the form of cash or securities to protect themselves against a participant default.<sup>57</sup> Collateral in the form of securities should be revalued every day and subject to prudent haircuts. For example, the CME Group allows its clearing members to post the following types of collateral as margin<sup>58</sup>:

- Cash (USD and selected foreign currency);
- U.S. Treasury securities;
- Letters of credit;
- Stocks, including select Standard & Poor's 500 Stock Price Index;
- Selected sovereign debt;
- Selected U.S. government agencies and mortgage backed securities;
- Selected money market mutual funds;
- Bank sponsored cash management program, through selected banks; and
- Physical commodities such as gold.<sup>59</sup>

Margin systems are designed to operate as a collateral safety net to prevent substantial exposures. If a debtor clearing member with outstanding

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55. The values of open derivatives contracts fluctuate daily. Marking-to-market refers to accounting for the fair value of an asset or liability based on its current market price. CPSS GLOSSARY, *supra* note 10. In other words, investments are re-valued based on current market prices. Therefore, clearing members can settle their exposures on a daily basis.

56. For example, LCH.Clearnet uses SPAN (the Standard Portfolio Analysis of Risk) for exchange traded derivatives, and RepoClear, PAIRS (Portfolio Approach to Interest Rate Scenarios) for SwapClear, and ERA (Equity Risk Analysis) for EquityClear. *See Initial Margin*, LCH.CLEARNET GRP., [http://www.lchclearnet.com/images/lch%20clearnet%20td%20-%20initial%20margin\\_tcm6-44535.pdf](http://www.lchclearnet.com/images/lch%20clearnet%20td%20-%20initial%20margin_tcm6-44535.pdf) (last visited Dec. 1, 2011).

57. *See, e.g.*, Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on Financial Collateral Arrangements, art. 1.4(a), 2002 O.J. (L 168/43) ("The financial collateral to be provided must consist of cash or financial instruments.").

58. CME Group uses the term "performance bonds" to refer to margins. CME FINANCIAL SAFEGUARDS, *supra* note 48, at 7.

59. *See id.* at 9.

obligations becomes insolvent before the settlement period, the creditor clearing members can satisfy their claims out of the debtor's margin account. For example, the CME Group has aggregate margin deposits of approximately \$90 billion.<sup>60</sup>

In the context of CCPs operating in the financial markets, margin requirements have led to daily settlements of gains and losses for open trades in markets with longer clearing cycles.<sup>61</sup> The aim is to avoid the buildup of exposures. Derivative<sup>62</sup> values are contingent and determined by marking-to-market. This means that a trader who is buying or selling futures will either make or lose money on a daily basis. Consequently, marking-to-market means that the maximum that a participant can lose is the defaulted amount within one trading day.<sup>63</sup>

Moreover, margin operates as a "performance deposit"<sup>64</sup> that is returned upon settlement of a transaction if the participants fulfill their obligations. If a counterparty defaults, the CCP can realize the collateral in the margin account to cover the defaulter's obligations. Generally, an investor will have a margin account with a broker, the broker will have a margin account with a clearing member, and the clearing member will have a margin account with the CCP. Furthermore, CCPs require their members to post two types of margin: initial margin and variation margin.<sup>65</sup>

### 1. Initial Margin

A market participant must post initial margin to first enter into an initial transaction. This type of margin is designed to ensure that the CCP has sufficient funds to cover potential losses from a default in normal market conditions. For example, the London Clearing House Clearnet Ltd (LCH.Clearnet) has approximately £31 billion in initial margin contributions<sup>66</sup> and has always had sufficient initial margin to cover losses resulting from a participant's default.<sup>67</sup>

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60. *Id.* at 19 (discussing data as of December 30, 2011).

61. Longer clearing cycle markets consist of trades that remain open for more than one month.

62. A derivative is a contractual asset whose value is derived from the value of another underlying asset, allowing for the efficient management and transference of risk to another party in exchange for a premium. See ANDREW M. CHISHOLM, *DERIVATIVES DEMYSTIFIED: A STEP-BY-STEP GUIDE TO FORWARDS, FUTURES, SWAPS AND OPTIONS 1* (John Wiley & Sons Ltd. eds., 2004).

63. Marking to market is "the revaluation of open positions in financial instruments at current market prices and the calculation of any gains or losses that have occurred since the last valuation." CPSS GLOSSARY, *supra* note 10, at 31.

64. CHISHOLM, *supra* note 62, at 44.

65. See Raymond Knott & Alastair Mills, *Modelling Risk in Central Counterparty Clearing Houses: A Review*, 2002 FIN. STABILITY REV. 162, 164–65.

66. *Initial Margin*, *supra* note 56 (discussing data as of January 2010).

67. *LCH.Clearnet Limited's Default Protections*, LCH.CLEARNET GRP., [http://www.lchclearnet.com/images/lch%20clearnet%20td%20%20%20default%20protections%202010\\_tcm6-44534.pdf](http://www.lchclearnet.com/images/lch%20clearnet%20td%20%20%20default%20protections%202010_tcm6-44534.pdf) (last visited Dec. 1, 2011).

## 2. Variation Margin

Variation margin effectively operates as a daily settlement of a market participant's outstanding positions by resetting the daily value of the underlying contract. If a position remains open at the end of the day, it will be marked-to-market so that profits and losses are credited to or debited from a clearing member's margin account.

Variation margin is a "top-up payment" into a market participant's margin account.<sup>68</sup> This means that payments are collected from members whose positions have suffered a loss and paid to the members whose positions have made a profit. The CCP will debit the debtor's margin account and credit the creditor's margin account by calculating margin on either a gross<sup>69</sup> or net<sup>70</sup> basis.<sup>71</sup> If a clearing member defaults before posting the variation margin it owes, the CCP will assume the loss from its default resources. This is known as "replacement cost risk."<sup>72</sup>

To elucidate the point, variation margin is calculated in the following manner:  $\text{variation margin} = (\text{today's closing price} - \text{yesterday's closing price}) \times \text{number of contracts} \times \text{contract size}$ .

For example, Clearing Member A (CMA) buys ten futures contracts from Clearing Member B (CMB) at \$100 per unit for delivery in December. Each contract is worth 1,000 units. This is novated to the CCP, which becomes the buyer to CMA and the seller to CMB.

On day two, the December closing price equals \$100.60. The  $\text{variation margin} = (100.60 - 100) \times 10 \times 1000 = \$6,000$ . Therefore, a loss of \$6,000 is debited from CMB's margin account, and \$6,000 is credited to CMA's margin account.

On day three, the December closing price equals \$100.40. The  $\text{variation margin} = (100.40 - 100.60) \times 10 \times 1000 = \$2,000$ . Therefore, a loss of \$2,000 is debited from CMA's margin account, and \$2,000 is credited to CMB's margin account.

68. For example, "settlement variation payments through CME Clearing averaged \$2.2 billion per day through June 30, 2010 and reached a historical record of \$18.5 billion on October 13, 2008." Therefore, these exposures are settled on a daily basis. CME FINANCIAL SAFEGUARDS, *supra* note 48, at 8.

69. Separate margin is required for every position.

70. Long positions are netted against short positions, and margin is required against the aggregate position. LCH.Clearnet calculates margin in this fashion.

71. Net margining predominates because it demands less liquidity from the participants. Knott & Mills, *supra* note 65, at 163 n.3.

72. Replacement cost is

the risk that a counterparty to an outstanding transaction for completion at a future date will fail to perform on the settlement date. This failure may leave the solvent party with an unhedged or open market position or deny the solvent party unrealized gains on the position. The resulting exposure is the cost of replacing, at current market prices, the original transaction.

See CPSS GLOSSARY, *supra* note 10, at 41.



**Initial Margin and Variation Margin:**

For example, John buys a share in a company for \$100, using \$20 of his own money and \$80 borrowed from his broker. The net value is \$20 (share – loan). The broker wants a minimum margin requirement of \$10 (initial margin). The share goes down to \$85 on day two. The net value is now only \$5 (net value (\$20) – share loss of (\$15)), and John will either have to sell the share or repay part of the loan so that the net value of his position is again above \$10. John will have to post a variation margin of \$5 in order to keep the position open.

**Margin Calls and Replacement Cost Risk:**

CMA buys a single futures contract from CMB, at a futures price of \$100 per widget. The contract is for 200 widgets and is due for delivery in three months time. When CMA and CMB register their contracts with the CCP, they are required to deposit \$5 of initial margin per widget. Each member therefore provides the CCP with \$1,000 of initial margin (5 x 200).

Suppose the futures price were to fall from \$100 at the end of the first day to \$99 by the end of the following day. At mark-to-market, the CCP would require \$200 in variation margin from CMA, and would transfer \$200 to CMB. This is calculated by subtracting today's closing price of \$19,800 (99 x 200) from yesterday's closing price of \$20,000 (100 x 200). Suppose at the end of the month, the futures price returns to \$100 before plummeting to an end-of-day price of \$90, after a large single-day price fall. For the purposes of illustration, it is assumed that there is no intraday margin call. At the end-of-day mark-to-market, the CCP is required to credit \$2,000 to CMB, and must receive an equivalent amount of funds from CMA (90 x 200 – 100 x 200 = 2000). Since CMA only has \$1,000 posted in initial margin, the CCP faces a replacement cost risk exposure of \$1,000, which becomes realized if CMA fails to meet an end-of-day variation margin call and defaults. If this occurs, the CCP would close out CMA's position, but be left with a shortfall of \$1,000 which it would have to meet through its own default resources.<sup>73</sup>

**D. DEFAULT FUND**

Clearing members are required to make contributions to a *default fund* or *guarantee fund*.<sup>74</sup> The contributions to the default fund are calculated depending on the clearing member's trading activity in a particular

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73. This example is a modified version of an example included in Knott & Mills, *supra* note 65, at 165.

74. CME FINANCIAL SAFEGUARDS, *supra* note 48, at 8–9.

market.<sup>75</sup> For instance, the CME Group calculates its default fund on the following basis:

In general, each clearing member is required to maintain a guarantee fund equal to the greater of \$500,000 or the results of a formula under which 84% of the total requirement is based on the clearing member's proportionate contribution to aggregate risk performance bond requirements over the preceding three months, 15% is based on the clearing member's contribution to risk-weighted transaction activity over the preceding three months, and 1% is based on settlement requirements. CME Clearing calculates clearing member guarantee fund requirements at the beginning of each quarter. As of June 30, 2010, the aggregate guarantee fund requirement totaled \$2.3 billion.<sup>76</sup>

Furthermore, firms clearing OTC products must maintain a security deposit minimum of \$2.5 million because these transactions are considered to be riskier.<sup>77</sup>

#### **E. INSURANCE**

Insurance reallocates the losses arising from a clearing member default to an insurance company. Craig Pirrong has noted that "no major CCP currently utilizes insurance for this purpose."<sup>78</sup> Rather, most CCPs "have insurance against some operational risks because [these] losses . . . cannot be assigned to [a] CCP default or guaranty fund[]." <sup>79</sup>

#### **F. FINANCIAL RESOURCES AND EQUITY OF THE CENTRAL COUNTERPARTY**

Some CCPs are for-profit organizations that are listed as public companies.<sup>80</sup> Therefore, they can use their equity to absorb losses. Pirrong has noted that:

to ensure that CCPs have the appropriate risk-taking and risk management incentives, it is essential that CCP equity be in a first loss position once the defaulter's resources . . . are exhausted. A CCP not in a first loss situation would potentially have an incentive to take additional risks because the profits arising from such risk taking would accrue to the equity holders, but some, and perhaps all, of the losses would accrue to others.<sup>81</sup>

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75. *Id.*

76. *Id.* at 14 (footnote omitted).

77. *Id.* at 8 n.6.

78. See Pirrong, *supra* note 28, at 9.

79. *Id.* at 9.

80. COMM. ON PAYMENT & SETTLEMENT SYS., REPORT OF THE WORKING GROUP ON POST-TRADE SERVICES, MARKET STRUCTURE DEVELOPMENTS IN THE CLEARING INDUSTRY: IMPLICATIONS FOR FINANCIAL STABILITY 14 (2010).

81. Pirrong, *supra* note 28, at 9.

For example, the CME Group has surplus funds of approximately \$100 million.<sup>82</sup> LCH.Clearnet has £20 million of its own capital,<sup>83</sup> and an additional €153.6 million<sup>84</sup> in reserves to use if the contributions by the solvent clearing members are insufficient.

#### **G. FINANCIAL CONTRIBUTIONS BY THE SOLVENT CLEARING MEMBERS**

The default procedures will typically allow the CCP to require capital contributions from the solvent clearing members for any remaining outstanding losses. The solvent clearing member's liability, however, will generally be capped at a certain percentage. For example, the CME Group allocates losses on the following basis:

If the default continued to remain unsatisfied after the surplus funds and aggregate guarantee funds were applied, CME Clearing would then invoke its right to assess clearing members for any unsatisfied obligations. The balance of the unsatisfied default would then be allocated among the clearing membership *up to an amount equal to 275 percent of the aggregate guarantee fund requirement* across all non-defaulting clearing members. The allocation would be based on each clearing member's share of the guarantee fund, regardless of products cleared or type of clearing membership.<sup>85</sup>

Similarly, Eurex Clearing has a Clearing Fund, which is a pool of funds accumulated by clearing members to use in case of a clearing member default.

Every Clearing Member is required to contribute to the Clearing Fund. In case of a Clearing Member default, margins will be liquidated and the contribution to the fund by the Clearing Member in question will be utilized. If the contribution of the illiquid Clearing Member and the accrued reserves of the Clearing House are not sufficient, the contributions of all other Clearing Members will be proportionally utilized.<sup>86</sup>

Furthermore, the aggregate default funds of the clearing members at LCH.Clearnet are approximately £584.5 million.<sup>87</sup> LCH.Clearnet has a "recapitalization mechanism";<sup>88</sup> if the default of a SwapClear member were to use up all of the default funds, LCH.Clearnet can require payment of £50

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82. See CME FINANCIAL SAFEGUARDS, *supra* note 48, at 16.

83. LCH.Clearnet Limited's Default Protection, *supra* note 67, at 12, 19.

84. *Id.* at 19 (discussing data as of the end of 2010).

85. CME FINANCIAL SAFEGUARDS, *supra* note 48, at 14 (emphasis added).

86. Clearing Funds, EUREX CLEARING, [http://www.eurexclearing.com/risk/lines\\_defense/funds\\_en.html](http://www.eurexclearing.com/risk/lines_defense/funds_en.html) (last visited Apr. 9, 2012).

87. LCH.Clearnet Limited's Default Protection, *supra* note 67, at 15 (discussing figures as of February 2011).

88. See Pirrong, *supra* note 28, at 23.

million from each remaining SwapClear member.<sup>89</sup> This funding can then be used to cover any further losses resulting from the defaulted member's swaps portfolio. LCH.Clearnet would also request that each clearing member contribute to replenish the default fund on a voluntary basis.

#### H. LINES OF CREDIT

A CCP may obtain emergency lines of credit from domestic and international commercial banks. For example, the CME Group has obtained "a fully secured, committed line of credit with a consortium of domestic and international banks" in order to "facilitate immediate liquidity needs."<sup>90</sup> The facility was worth approximately \$1 billion, and is expandable to \$1.5 billion.<sup>91</sup>

#### I. CASE STUDIES

There are several occasions where the CCP has successfully initiated its default procedures to cover losses arising from a clearing member's insolvency. For example, LCH.Clearnet only required 35 percent of Lehman's \$2 billion of initial margin to close out its outstanding positions.<sup>92</sup>

In order for the default procedures to work properly, however, it is necessary to organize the waterfall of financial resources in a manner that "provides the CCP with a strong incentive to control risk, monitor its members, and choose margin level prudently."<sup>93</sup> This can be achieved by placing the CCP's capital near the top of the waterfall (e.g., after the defaulter's resources).

LCH.Clearnet, CME Group, and Eurex Clearing allocate their losses on the following basis:

LCH.Clearnet Ltd.<sup>94</sup>

1. Defaulter's margin;
2. Defaulter's own Default Fund Contribution;
3. LCH.Clearnet Ltd's own capital (up to £20 million);
4. Remaining Default Fund (£584.5 million from solvent clearing members);
5. SwapClear Contributions (up to £50 million from solvent clearing members); and
6. Remainder of LCH.Clearnet Ltd's capital (€153.6 million).

CME Group<sup>95</sup>

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89. *LCH.Clearnet Limited's Default Protection*, *supra* note 67, at 17.

90. CME FINANCIAL SAFEGUARDS, *supra* note 48, at 14.

91. *Id.* at 14 (describing data as of December 31, 2009).

92. See NORMAN, *supra* note 22, at 45.

93. See Pirrong, *supra* note 28, at 21.

94. *LCH.Clearnet Limited's Default Protections*, *supra* note 67, at 18.

1. Defaulter's margin;
2. Defaulter's Guarantee Fund Contribution;
3. CME's surplus funds (\$100 million of own capital);
4. Remaining Guarantee Fund (\$2.3 billion);
5. Financial contributions from solvent clearing members (equal to 275 percent of the guarantee fund); and
6. Emergency Credit Line from commercial banks (up to \$1.5 billion).

#### Eurex Clearing<sup>96</sup>

1. Defaulter's margin;
2. Defaulter's own Default Fund Contribution;
3. Eurex Clearing Reserve (own capital);
4. Remaining Default Fund (solvent clearing members); and
5. Remainder of Eurex Clearing equity capital.

A CCP should ensure that it has sufficient financial resources to cover the simultaneous default of two or more large clearing members. If there are insufficient financial resources for the CCP to pay its obligations to all the clearing members, however, then the CCP itself will become insolvent. Therefore, a central bank may have to intervene to bail out an insolvent CCP that is too big to fail.

#### IV. CENTRAL BANK POWERS

It is not the traditional role of a central bank to provide Emergency Liquidity Assistance (ELA) or Lender of Last Resort (LOLR) services to institutions other than commercial banks.<sup>97</sup> After the 2007 global financial crisis, there were several nonbank financial institutions, such as investment banks<sup>98</sup> and insurance companies,<sup>99</sup> which suffered *liquidity* and *solvency* problems. Access to central bank liquidity was necessary in order to avoid declaring bankruptcy and spreading systemic risk to the wider financial system.

In response to the global financial crisis, the role of a central bank as the LOLR has changed. Traditionally, a central bank would only lend to solvent banks facing temporary liquidity issues. These loans were only made in exchange for good collateral. After the financial crisis, however, it appears that central banks are willing to lend to systemically important

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95. CME FINANCIAL SAFEGUARDS, *supra* note 48, at 13.

96. *Lines of Defense*, EUREX CLEARING, [http://www.eurexclearing.com/risk/line\\_defense\\_en.html](http://www.eurexclearing.com/risk/line_defense_en.html) (last visited Apr. 9, 2012).

97. Banks that accept deposits on behalf of their customers and credit them into a bank account are known as commercial banks in the United Kingdom, depository institutions in the United States, and credit institutions in the European Union.

98. For example, Bear Stearns and Merrill Lynch.

99. For example, American International Group (AIG).

financial institutions that are insolvent and considered too big and too interconnected to fail.

This raises the question as to whether central banks should have the legal authority to provide this kind of emergency lending to a CCP that is considered too big to fail. The legislature must ensure that there is legal certainty in order to avoid moral hazard and to create confidence and stability in the financial system.<sup>100</sup> Furthermore, legislation must ensure that taxpayers are fully protected and are not bearing the costs arising from the bailout of an insolvent financial institution.

Consideration must be given to the circumstances under which a central bank can lend to an illiquid or an insolvent commercial bank. Central banks in most major jurisdictions have the discretionary power to decide whether or not to lend to a bank facing liquidity or solvency problems. They have two tools at their disposal: LOLR and ELA.<sup>101</sup> In order to know which tool it will use in exercising its discretion, a central bank must first assess whether a bank is “illiquid” or “insolvent.”

#### A. THE DISTINCTION BETWEEN “ILLIQUIDITY” AND “INSOLVENCY”

There is a legal distinction between illiquidity and insolvency. In *Cheyne Finance plc*, Justice Briggs contrasted “a momentary inability to pay . . . [as a] result of *temporary lack of liquidity* soon to be remedied” with “an endemic shortage of working capital,” which renders “a company . . . on any commercial view *insolvent*, even though it may be able to pay its debts for the next few days, weeks or months before an inevitable failure.”<sup>102</sup>

In practice, the distinction between insolvency and illiquidity, however, has been hard to ascertain. The U.K. Cork Report<sup>103</sup> observed that “insolvency law is not an exact science.”<sup>104</sup> The report also stated that “[i]n *practical* terms insolvency arises at the moment when debts cannot be met as they fall due. That moment is often difficult to pinpoint precisely, yet it is the pivot on which all else turns.”<sup>105</sup>

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100. Campbell and Lastra have stated that “[t]he importance of a clear mandate and a set of enabling rules for the central bank with regard to financial stability, in particular with regard to LOLR/ELA operations contributes positively to the safeguard of confidence and has a positive reputational effect.” Andrew Campbell & Rosa Lastra, *Revisiting the Lender of Last Resort*, 24 BANKING & FIN. L. REV. 454, 496 (2009).

101. The terms LOLR and ELA are not used consistently in the literature regarding central banks. The term LOLR is often used interchangeably with ELA. This Article draws a distinction between the two concepts in order to create legal certainty.

102. *In re Cheyne Finance plc* (No 2), [2007] EWHC (Ch) 987, [51] (Eng.) (emphasis added).

103. REVIEW COMMITTEE ON INSOLVENCY LAW AND PRACTICE, REPORT OF THE REVIEW COMMITTEE ON INSOLVENCY LAW AND PRACTICE, 1982, Cm. 8558 (U.K.).

104. *Id.* ¶ 196.

105. *Id.* ¶ 205.

In *BNY Corporate Trustee Services Ltd v. Eurosail-UK 2007-3BL Plc & Ors*,<sup>106</sup> the English Court of Appeal recently considered the legal difference between illiquidity and insolvency. The court confirmed that the provisions in the Insolvency Act (IA) regarding illiquidity and insolvency should be given a “context-specific” interpretation.<sup>107</sup> Therefore, a court will have to use its discretion,<sup>108</sup> on a case-by-case basis, to determine whether a company is insolvent or merely facing temporary liquidity problems. Section 123(2) of the IA provides that “[a] company is also deemed unable to pay its debts if it is proved to the satisfaction of the court that the value of the company’s assets is less than the amount of its liabilities, taking into account its contingent and prospective liabilities.”<sup>109</sup>

Lord Neuberger M.R. made the following observations about section 123(2):

In the first place, I do not consider that the question whether section 123(2) applies simply turns on the question whether the liabilities of a company (however they are assessed) exceed its assets (however they are assessed). In practical terms, it would be rather extraordinary if section 123(2) was satisfied every time a company’s liabilities exceeded the value of its assets. Many companies which are solvent and successful, and many companies early on in their lives, would be deemed unable to pay their debts if this was the meaning of section 123(2).<sup>110</sup>

Clearly, the closer in time a future liability is to mature, or the more likely the contingency which would activate a contingent liability, and the greater the size of the likely liability, the more probable it would be that section 123(2) will apply.<sup>111</sup>

Lord Justice Toulson agreed, and elaborated on the effect of section 123(2):

Essentially, section 123(2) requires the court to make a judgment whether it has been established that, looking at the company’s assets and making proper allowance for its prospective and contingent liabilities, it cannot reasonably be expected to be able to meet those liabilities. If so, it will be deemed insolvent although it is currently able to pay its debts as they fall due. The more distant the liabilities, the harder this will be to establish.<sup>112</sup>

Therefore, the court will have to make a context-specific analysis and decide on a case-by-case basis whether a bank is insolvent.

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106. *BNY Corp.Tr. Services Ltd. v. Eurosail-UK 2007-3BL Plc et al.*, [2011] EWCA (Civ) 227 (Eng.).

107. *Id.* ¶ 35 (Lord Neuberger M.R.).

108. *Id.* ¶ 61 (Lord Neuberger M.R.).

109. Insolvency Act, 1986, c. 45, § 123(2) (Eng.).

110. *BNY Corp. Tr. Services Ltd. v. Eurosail-UK*, at [44].

111. *Id.* ¶ 62.

112. *Id.* ¶ 119.

Andrew Campbell and Rosa Lastra have also noted that the distinction between illiquidity and insolvency at a bank is particularly difficult to establish during a financial crisis:

Lending to insolvent institutions is a departure from the classical LOLR principles. The risk of loss to the central bank is ultimately the risk of loss to the public (taxpayers). However, in practice, and this is particularly acute in time of crises, it is often hard to distinguish between illiquidity and insolvency. . . . The immediacy of the need for assistance often makes it difficult to assess at the moment whether the institution is illiquid or insolvent.<sup>113</sup>

. . . .

Another definitional issue where the contours are becoming less clear concerns the distinction in times of crises between regular discount policies (a classic instrument of monetary policy) and extraordinary or emergency lending.<sup>114</sup>

The difficulty in distinguishing illiquidity and insolvency became evident during the recent global financial crisis. Central banks around the globe exercised their discretionary powers on an ad hoc basis, with no legal certainty regarding the course of action that a central bank would take in any given circumstance.<sup>115</sup>

The United States, United Kingdom, and the European Union followed very different approaches in response to the financial crisis due to varying legal frameworks.<sup>116</sup> Therefore, it is argued that central banks should be governed by a legislative framework, which clearly outlines what their legal powers are, especially with respect to CCPs. Additionally, a “central bank should be held accountable for the use of its discretionary [LOLR] powers.”<sup>117</sup>

## B. LENDER OF LAST RESORT

There is a difference between a bank facing liquidity problems and the characterization of a bank as insolvent. Illiquidity refers to a bank which is facing a temporary lack of liquid funds. This typically manifests itself in the form of temporary cash-flow problems on the bank’s balance sheet. A bank facing liquidity problems will have a healthy balance sheet with long-term assets exceeding its short-term liabilities. It is expected that the bank would

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113. Campbell & Lastra, *supra* note 100, at 467–68.

114. *Id.* at 458.

115. For example, Bear Stearns and AIG were bailed out during the financial crisis, whereas Lehman was not.

116. Campbell and Lastra criticize the different approaches taken by central banks in different jurisdictions by noting that “global crises . . . require global solutions. And yet, crisis management procedures . . . are for the most part nationally based.” *See* Campbell & Lastra, *supra* note 100, at 455.

117. *Id.* at 467.



be able to make a quick recovery, especially if it receives short-term loans from the central bank in exchange for collateral in the form of long-term assets. Campbell and Lastra have described this as LOLR assistance.<sup>118</sup> They have also noted that central bank liquidity assistance is a valuable tool in the control and prevention of banking crises because central bank assistance is available immediately.<sup>119</sup>

Depending on the gravity of the situation, a bank may decide to enter into administration<sup>120</sup> until its liquidity issues are resolved. A bank facing liquidity problems may ultimately become insolvent if it is unable to gain immediate access to liquid funds from a reliable source.

Henry Thornton and Walter Bagehot were the first to outline the conditions under which a central bank can act as the LOLR to a commercial bank facing liquidity problems.<sup>121</sup> These conditions are known as the four pillars for providing LOLR assistance<sup>122</sup>:

1. Financial assistance should be made available to banks which are *illiquid* but *solvent* in order to stem a crisis.
2. The central bank should charge the illiquid bank a *high rate of interest* for lending. This ensures that recourse to such assistance is made only if the illiquid bank has exhausted all other potential avenues of assistance.<sup>123</sup>
3. The central bank should only provide assistance to a bank in exchange for good *collateral*. This will typically consist of liquid collateral in the form of government bonds<sup>124</sup> or other liquid assets with a high credit rating. The central bank should not provide further assistance when a bank exhausts its supply of good collateral.
4. The central bank must make it clear in advance that it has discretion in whether to provide assistance or not. This reduces moral hazard.

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118. LOLR assistance “refers to collateralized loans to an illiquid banking sector.” *Id.* at 457.

119. Campbell and Lastra also noted that a central bank has an *unlimited capacity* to provide liquidity. *Id.* at 463–64.

120. “As a legal concept, administration is a procedure under the insolvency laws of a number of common law jurisdictions. It functions as a rescue mechanism for insolvent entities and allows them to carry on running their business.” *Administration*, WIKIPEDIA, [http://en.wikipedia.org/wiki/Administration\\_%28law%29](http://en.wikipedia.org/wiki/Administration_%28law%29) (last visited Apr. 24, 2012).

121. Campbell & Lastra, *supra* note 100, at 465.

122. “These are not legal principles.” *Id.* at 465.

123. See Charles. W Calomiris, *Is the Discount Window Necessary? A Penn-Central Perspective* 1 (Nat’l Bureau of Econ. Research, Working Paper No. 4573, 1993).

124. The 2011 European sovereign debt crisis, however, has raised questions over whether sovereign bonds are completely risk free.

It seems unlikely however, that central banks will be able to provide LOLR assistance to CCPs, since CCPs do not generally face liquidity problems in the same way that commercial banks do.

### **C. EMERGENCY LIQUIDITY ASSISTANCE**

Insolvency, on the other hand, is a situation where the value of a bank's liabilities exceeds the market value of its assets. In these circumstances, it is not expected that a bank will be able to recover without assistance from the central bank. Since the bank's short-term liabilities will typically exceed its long-term assets, it will not have adequate collateral to provide to the central bank in exchange for a loan. Thus, in these situations where LOLR assistance is not available, a central bank can provide ELA to a too big to fail bank.

Campbell and Lastra note that ELA "encompasses a broader array of operations."<sup>125</sup> The central bank, in exercising its discretion, would have to create a new method for lending to an insolvent bank in exchange for something other than good collateral. This type of emergency lending would amount to a bailout from the central bank, with the ultimate goal of making the bank solvent again. Otherwise, the bank would have to commence bankruptcy proceedings, thereby resulting in the business's demise.

Therefore, it remains legally uncertain under what conditions a central bank will provide ELA to a bank facing insolvency, and the form that liquidity assistance will take. This is especially true when dealing with an insolvent CCP that is considered too big to fail.

In sum, LOLR is used for resolving liquidity problems, whereas ELA is used for resolving solvency problems.

## **V. THE LEGAL NATURE OF CENTRAL BANK LIQUIDITY ASSISTANCE TO AN INSOLVENT CENTRAL COUNTERPARTY**

### **A. WHEN IS A CENTRAL COUNTERPARTY LEGALLY INSOLVENT?**

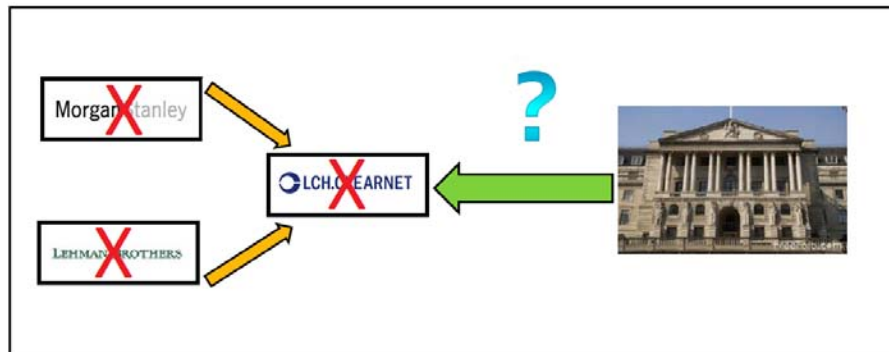
A CCP is not like other corporations or financial institutions. The continued solvency of the CCP depends first on the amount of financial resources it has, and second, on the financial strength of its clearing members and their willingness to voluntarily provide liquidity to the CCP in an emergency situation. A CCP cannot generally face liquidity problems; it becomes insolvent immediately after it runs out of the waterfall of financial resources in its default procedures.

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125. Campbell & Lastra, *supra* note 100, at 454.

### B. A HYPOTHETICAL CENTRAL COUNTERPARTY INSOLVENCY

Imagine a scenario where two large clearing members of LCH.Clearnet, Morgan Stanley and Lehman, become insolvent. LCH.Clearnet uses up all of its waterfall of financial resources and becomes insolvent. Would it receive a bailout from the Bank of England (BoE) in order to pay its remaining obligations to the other clearing members?



### C. LENDER OF LAST RESORT ASSISTANCE FOR CENTRAL COUNTERPARTIES

It remains unclear what tools, if any, a central bank can use to help a CCP facing liquidity problems. Whether a central bank will ever be able to provide a CCP with LOLR assistance is unclear. The uncertainty arises because a CCP does not experience liquidity problems in the same way that a commercial bank does; a CCP goes directly from being solvent to being insolvent, thereby bypassing the illiquidity stage. A CCP should have financial resources available to prevent it from ever facing liquidity problems, which is outlined in its default procedures.

When a clearing member becomes insolvent, the CCP initiates its default procedures. If a CCP faces liquidity problems, this means that it is not properly performing its risk management function. Additionally, it means that the pool of financial resources at its disposal in the event of a clearing member's insolvency are illiquid and of insufficient quality to be used by the CCP to perform its obligations. This reality would ultimately be a risk management failure.

Under a typical clearing arrangement, the CCP would be in breach of the clearing arrangement if it accepted a liquidity injection from the central bank before all the financial resources outlined in the default procedures were exhausted. Furthermore, since LOLR assistance should only be made in exchange for good collateral, a CCP would also be in breach of the clearing arrangement if it were able to use its good collateral in exchange for central bank liquidity. The clearing arrangement would typically require the CCP to use the good collateral for the performance of its obligations to

the clearing members. It would be a pointless exercise for the CCP to exchange its good collateral for central bank liquidity, since CCPs only accept liquid collateral which is easy to sell in the first place.<sup>126</sup>

Therefore, it is debatable whether, under the current practices for drafting clearing arrangements, the need for LOLR assistance from a central bank to a CCP should not arise. Nevertheless, unforeseen scenarios may arise in the future where this kind of liquidity assistance may be necessary. It is likely that CCPs will cooperate with central banks in the near future in order to design innovative ways to inject liquidity into CCPs facing liquidity problems. This will most likely be done in the form of altering the legal nature of the clearing arrangement and tinkering with the default procedures.

#### **D. EMERGENCY LIQUIDITY ASSISTANCE FOR CENTRAL COUNTERPARTIES**

A CCP becomes insolvent when it has used up all the financial resources provided in the default procedures. At this point, the central bank could use ELA to bail out a too big to fail CCP. As with commercial banks, however, it remains uncertain what form ELA could take because central banks are likely to decide what facilities to use on an ad hoc basis.

Nevertheless, before a central bank can provide ELA, it will have to assess whether an insolvent CCP is too big to fail—in other words, whether the insolvent CCP is systemically important and if it has the potential to spread contagion to the wider financial system. Jeremy Kress has noted that

[b]ecause of systemic implications of a CCP failure, CCPs may be—or at least may be perceived as—[too big to fail], thereby encouraging reckless behavior by CCP members who presume that the government will bail out the CCP should a crisis occur.<sup>127</sup>

CCPs may fail for any number of reasons . . . . Operational failure, technical malfunction or human error could lead to a CCP defaulting on its obligations. However, since it concentrates systemic risk so dramatically, a CCP is unlikely to be allowed to fail. In other words, if in a time of market distress a CCP were on the verge of default, regulators would have little choice but to make good on the CCP's obligations, lest the financial system implode.<sup>128</sup>

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126. Still, it is possible to imagine a scenario where a CCP accepts the sovereign bonds of Greece as collateral under the belief that they are highly liquid (i.e., easy to sell) and risk-free. The European sovereign debt crisis of 2011 demonstrated that those bonds became illiquid when Greece defaulted on its sovereign debt. Under those circumstances, it might be possible for a central bank to provide the CCP with a temporary loan in exchange for the risky and illiquid sovereign debt, which acts as “good” collateral. This would essentially consist of LOLR assistance.

127. Kress, *supra* note 9, at 72.

128. *Id.* at 73.

A central bank should always conduct a *cost-benefit analysis*<sup>129</sup> to ensure that the risk of contagion outweighs the risk of moral hazard created by a CCP bail out. This balancing act requires: a consideration of the *size* of the CCP's exposure, the *number* of clearing members that may become insolvent, and the *interconnectedness* of the CCP to other market infrastructure institutions. The central bank can subsequently make an informed decision as to whether to provide ELA to the insolvent CCP.

#### E. WHO IS BAILED OUT?

Jeremy Kress has suggested that “as a final alternative, rather than providing liquidity directly to a CCP, the [central bank] could *lend indirectly* through CCP members. Under this indirect lending approach, the [central bank] could provide emergency liquidity to non-defaulting members.”<sup>130</sup> On the contrary, it has been argued that as a matter of legal principle, a central bank should not be able to *indirectly* bail out an insolvent CCP by *directly* bailing out a clearing member.

First, the clearing arrangement contractually provides that the outstanding obligations are owed by the CCP to all the clearing members as the principal to every transaction; the obligations are not owed by the clearing members to the other clearing members. This is the central point of the clearing arrangement. After counterparty substitution takes place through either novation or an open offer, the clearing members no longer have corresponding obligations *vis-à-vis* one another.<sup>131</sup>

Second, it is argued that a central bank should *never* be allowed to lend indirectly to an insolvent CCP by lending to an insolvent or a solvent clearing member.<sup>132</sup> This would allow the central bank to be selective and choose which clearing members to bail out. For example, a central bank could decide to lend to an insolvent clearing member that was a national corporation as opposed to an insolvent clearing member that was headquartered in a foreign jurisdiction.

Similarly, the Eurex Clearing CCP is regulated and supervised by authorities in several jurisdictions.<sup>133</sup> What would occur if a large clearing

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129. See Campbell & Lastra, *supra* note 100, at 467.

130. Kress, *supra* note 9, at 78 (emphasis added).

131. See generally *Counterparty Substitution*, *supra* note 11.

132. “Bagehot and Thornton contended that the LOLR’s responsibility is to the market, to the entire financial system and not to specific institutions.” Campbell & Lastra, *supra* note 100, at 466.

133. Accordingly,

As a global CCP, Eurex is also regulated and overseen by the Swiss Financial Market Supervisory Authority (FINMA)/Swiss National Bank (SNB), as a recognized overseas clearing house (ROCH) by the United Kingdom Financial Service Authority (FSA), and as a Multilateral Clearing Organization by the United States Commodities Futures Trading Commission (CFTC) as well as by the United States Securities and Exchange Commission (SEC).

member headquartered in London became insolvent, and this caused other clearing members of Eurex to become insolvent, ultimately causing Eurex to become insolvent? What if the German Bundesbank waited for a response from the BoE before intervening? The Bundesbank might expect the BoE to provide the insolvent clearing member headquartered in London with a bailout. This wait time would be undesirable, as it could spread systemic risk.

Third, tax payers should not have to bail out insolvent corporations. A central bank should not “use its LOLR to bail-out bank owners; the LOLR’s ultimate responsibility remains to the market, to the entire financial sector and not to any particular institution.”<sup>134</sup>

## VI. THE FINANCIAL MARKET LEGISLATIVE REFORMS

### A. THE LAW IN THE UNITED STATES: THE FEDERAL RESERVE BANK

#### 1. The Law before the Global Financial Crisis: The Federal Reserve Act

Before the global financial crisis struck in 2007, § 13(3) of the Federal Reserve Act<sup>135</sup> provided the Federal Reserve Bank (the Fed) with legal powers to grant routine short-term loans through the discount window<sup>136</sup> to *depository institutions* and to provide access to *other entities* in emergency circumstances. CCPs did not qualify for short-term loans during times of financial stability since they did not qualify as depository institutions; however, they could qualify under the latter.<sup>137</sup>

The Fed could have provided liquidity to a CCP in emergency circumstances (i.e., during times of market stress). Section 13(3) granted the Fed broad discretion to extend credit to “any individual, partnership, or corporation” in “unusual and exigent circumstances” and when failure to extend such credit “would adversely affect the economy.”<sup>138</sup> Therefore, before the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the Dodd-Frank Act) was passed, the Fed would have had the authority under § 13(3) to lend to a systemically important CCP that was

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INT’L MONETARY FUND, GERMANY: FINANCIAL SECTOR ASSESSMENT PROGRAM—DETAILED ASSESSMENT OF OBSERVANCE ON EUREX CLEARING AG OBSERVANCE OF THE CPSS-IOSCO RECOMMENDATIONS FOR CENTRAL COUNTERPARTIES 10 (2011) [hereinafter IMF COUNTRY REP. 2011].

134. See Campbell & Lastra, *supra* note 100, at 470.

135. Federal Reserve Act § 13, 12 U.S.C. § 343 (2006).

136. The discount window is a short-term loan from the Fed to a troubled institution which is facing a temporary liquidity shortfall. The Fed typically makes loans with overnight maturities.

137. 12 U.S.C. § 461(b)(1)(A).

138. 12 C.F.R. § 201.4(d) (2009).

facing liquidity problems or had become insolvent, provided that the CCP could post suitable collateral.<sup>139</sup>

In fact, during the financial crisis, the Fed exercised its discretion under § 13(3) by lending to an array of financial institutions that were not depository institutions, as these were considered to be “unusual and exigent circumstances.”<sup>140</sup> For example, it created a special purpose vehicle (SPV) to hold assets the Fed purchased to facilitate the merger between investment banks J.P. Morgan and Bear Stearns. In addition, it formed two SPVs to lend to the insurance company American International Group (AIG).<sup>141</sup>

The legality of these lending facilities, however, has been challenged by scholars like Chad Emerson.<sup>142</sup> Therefore, the Dodd-Frank Act<sup>143</sup> was enacted to address these criticisms and others. The Dodd-Frank Act ensures that the Fed can no longer provide liquidity to financial institutions. Nevertheless, it will be seen below that the new provisions in the Dodd-Frank Act closely resemble those in § 13(3).

## 2. The Financial Regulatory Reforms: Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010

### *i. Overview*

Title VIII of the Dodd-Frank Act, entitled “Payment, Clearing, and Settlement Supervision,”<sup>144</sup> deals directly with the policy concern of a central bank bailing out a too big to fail CCP. It provides the Fed with the legal power to extend credit to CCPs through the discount window; however, this power may be exercised “only in unusual or exigent circumstances.”<sup>145</sup> Jeremy Kress has noted that “Dodd-Frank ensures that clearinghouses have access to Federal Reserve liquidity but severely limits the circumstances under which such borrowing will be permitted.”<sup>146</sup>

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139. Section 13(3)’s collateral standards were broad and allowed the Fed to accept almost any type of collateral in exchange for a loan. The Fed lent \$506 billion to troubled institutions under § 13(3) in December 2008. *See* 12 U.S.C. § 13.

140. *Id.*; *see generally* Campbell & Lastra, *supra* note 100.

141. It also created a series of lending facilities, which included: Discount Window Lending (DWL); Open Market Operations (OMOs); Term Asset-Backed Securities Loan Facility (for depository institutions); Term Auction Facility (for depository institutions); Term Securities Lending Facility (lending Treasury securities to primary dealers taking in exchange mortgage backed securities (repo)); and Primary Dealers Credit Facility (PDFC) (provided dealers with access to a Federal Reserve credit facility. The primary dealers pledged securities to borrow dollars (secured-lending). Campbell & Lastra, *supra* note 100, at 490–94.

142. *See* Chad Emerson, *The Illegal Actions of the Federal Reserve: An Analysis of How the Nation’s Central Bank Has Acted Outside the Law in Responding to the Current Financial Crisis*, 1 WM. & MARY BUS. L. REV. 109 (2010).

143. Dodd-Frank Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010) (codified in scattered sections of the U.S.C. (2010)).

144. *Id.* § 801.

145. *Id.* § 806(b).

146. *See* Kress, *supra* note 9, at 91.

It is important to note that Title VIII only covers CCPs that are designated as being systemically important by the Financial Stability Oversight Council (FSOC).<sup>147</sup> These CCPs will be deemed too big to fail for a number of reasons. First, a “financial market utility” is defined as “any person that manages or operates a multilateral system for the purpose of transferring, clearing, or settling payments, securities, or other financial transactions among financial institutions or between financial institutions and the person.”<sup>148</sup> Although the statute does not use the term CCP, the definition would likely include most CCPs.<sup>149</sup> Furthermore, Title VIII uses the definition “designated clearing entity”<sup>150</sup> to include two different types of CCPs: a derivatives clearing organization<sup>151</sup> (i.e., a CCP that clears derivatives), and a clearing agency<sup>152</sup> (i.e., a CCP that clears securities).<sup>153</sup>

Second, a “designated financial market utility”<sup>154</sup> includes a financial market utility that is systemically important, meaning they must be large enough to “threaten the stability of the financial system of the United States.”<sup>155</sup> The FSOC designates a financial market utility as systemically important<sup>156</sup> by taking into account various considerations: the monetary value of transactions processed; the aggregate exposure of the financial market utility to its counterparties; the interdependencies between financial market utilities; the effect that a failure or disruption that a financial market utility would have on a critical market or broader financial system; or any other factors the FSOC deems appropriate.

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147. The FSOC is an independent body of regulators created by the U.S. Congress under the Dodd-Frank Act in order to monitor the financial stability in the United States. *Financial Stability Oversight Council*, U.S. DEP’T OF THE TREAS., <http://www.treasury.gov/initiatives/fsoc/Pages/default.aspx> (last updated June 11, 2012).

148. Dodd-Frank Act § 803(6), 124 Stat. 1805 (codified at 12 U.S.C. § 5462).

149. It is unhelpful that this section of the Act does not even use the term CCP. This increases the risk of legal uncertainty.

Legal risk is the most important risk for lawyers to manage. It is the risk that a party will suffer a loss because laws or regulations do not support the rules and contracts of the CCP or the property rights and other interests held through the CCP. . . . Legal risk may arise if the application of laws and regulations is unclear. . . . The legal literature on ‘clearing and settlement’ is complex and confusing as it fails to take a uniform approach in terminology usage, thereby overcomplicating theoretical concepts and processes.

*Lex Mercatoria*, *supra* note 1, at 62–63.

150. Dodd-Frank Act § 803(3), 124 Stat. 1803 (codified at 12 U.S.C. § 5462).

151. The U.S. Commodity Futures Trading Commission (the CFTC) is the supervisory agency responsible for regulating derivatives clearing organizations (DCO). *Id.* § 803(8)(A)(ii).

152. The U.S. Securities and Exchange Commission (the SEC) is the supervisory agency responsible for regulating clearing agencies. *Id.* § 803(8)(A)(i).

153. Again, it is unhelpful that these systems were not expressly defined as CCPs. These definitions are inconsistent with the literature in this area.

154. Dodd-Frank Act § 803(4), 124 Stat. 1804 (codified at 12 U.S.C. § 5462).

155. *Id.* § 803(9).

156. *Id.* § 804.



*ii. Lender of Last Resort*

Under the Dodd-Frank Act, a systemically important CCP can apply for an account at one of the twelve Federal Reserve Banks. Title VIII provides that the “Board<sup>157</sup> may authorize a Federal Reserve Bank to establish and maintain a deposit account for a designated financial market utility (i.e., CCP) and provide the services listed in § 11A(b) of the Federal Reserve Act<sup>158</sup> that it provides to a depository institution.”<sup>159</sup> This means that CCPs are treated as commercial banks, and thus, will have access to central bank liquidity if the CCP’s default procedures fail or if severe market volatility exists. The change in U.S. law mirrors French law, which treats CCPs as “credit institutions.”<sup>160</sup>

Before the enactment of the Dodd-Frank Act, CCPs could not make direct use of the discount window. After its enactment, the Fed can now intervene during times of crisis to solve liquidity problems that CCPs are facing by acting as the LOLR. It should be noted that the Board may authorize the Fed to provide a designated financial market utility “discount and borrowing privileges *only* in unusual or exigent circumstances.”<sup>161</sup>

To obtain discount and borrowing privileges, the CCP must show that it is unable to secure adequate credit accommodations from other banking institutions. “All such discounts and borrowing privileges shall be subject to such other limitations, restrictions, and regulations as the Board of Governors may prescribe.”<sup>162</sup> In other words, the Fed has the *discretion* to lend; it does not have an *obligation* to do so. In order to lend, the majority of the Board must vote in favor of assistance, the Fed must consult the Secretary of the Treasury, and the CCP must not have been able to secure liquidity elsewhere first.<sup>163</sup> Therefore, moral hazard is reduced because the Fed has discretionary control over when and how the discount window is accessed.<sup>164</sup>

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157. The Board of Governors of the Federal Reserve System is a federal agency composed of seven members and the Chairman of the Federal Reserve. *The Structure of the Federal Reserve System*, BD. OF GOVERNORS OF THE FED. RESERVE SYS. (July 8, 2003), <http://www.federalreserve.org/pubs/frseries/frseri.htm>.

158. 12 U.S.C. § 248a(b).

159. Dodd-Frank Act § 806(a), 124 Stat. 1811 (codified at 12 U.S.C. § 5465).

160. MONETARY & FIN. CODE art. L442-1 to -9 (Fr.).

161. Dodd-Frank Act § 806(b), 124 Stat. 1811 (codified at 12 U.S.C. § 5465) (emphasis added).

162. *Id.*

163. *Id.*

164. Nevertheless, Colleen Baker has warned that “the introduction of Title VIII’s emergency powers could also introduce moral hazard and other important policy concerns. As an emergency power, it should either be part of the Fed’s 13(3) emergency powers or have safeguards equivalent to those contained in the Fed’s 13(3) emergency powers.” Colleen Baker, *A Coming Catastrophe? The Potential Clearinghouse and Financial Utility “Rescue Plan” for OTC Derivatives, Repos, and Other Financial Transactions in Dodd-Frank’s Title VIII* 25 (Nov. 29, 2010) (unpublished draft) (on file with author) [hereinafter Baker, *A Coming Catastrophe?*]. For further information about Baker’s research, see Colleen Baker, *The Federal Reserve As Last Resort*, 46 U. MICH. J.L. REFORM (forthcoming 2012) [hereinafter Baker, *The Federal Reserve As Last Resort*].

Colleen Baker argues that Title VIII provides the Fed with a wide legal power: “Title VIII not only creates the legal authority for the Federal Reserve to backstop OTC derivative clearing houses, but also creates a more expansive legal authority for the Federal Reserve to backstop potential future clearing houses or other types of financial market utilities for a variety of financial transactions.”<sup>165</sup>

Notwithstanding the Fed’s power, Title VIII is ambiguous for several reasons. First, it does not specify whether the CCP must provide good collateral in exchange for access to the discount window. Second, it does not specify under what conditions the Fed can exercise its discretion to lend to a CCP facing liquidity problems, which raises a number of additional questions. Must the CCP exhaust all of its available financial resources in its default procedures and declare bankruptcy before it can borrow from the Fed, or can a CCP borrow before having to use its own financial resources and equity to fulfill its obligations? This point raises another question: if the CCP needs to provide collateral in exchange for liquidity from the Fed, should the CCP not be using this collateral to pay its obligations to the clearing members?

Third, it is unclear whether the Fed can only lend directly to an insolvent CCP, or whether it can lend indirectly to an insolvent or solvent clearing member. This third issue seems to have been addressed in § 716 of the Dodd-Frank Act, which prohibits the Fed from bailing out “swaps entities.”<sup>166</sup> Since most clearing members will be registered as swaps entities, it is implied that the Fed cannot lend directly to insolvent clearing members. Further prohibitions against bailing out clearing members can be found in § 1101(a)(B)(i) of the Dodd-Frank Act:

Such policies and procedures shall be designed to ensure that any emergency lending program or facility is for the purpose of providing liquidity to the financial system, and *not to aid a failing financial company*, and that the security for emergency loans is sufficient to protect taxpayers from losses and that any such program is terminated in a timely and orderly fashion.<sup>167</sup>

Title VIII of the Dodd-Frank Act has given the Fed increased oversight and regulatory powers over CCP activities in exchange for CCPs’ access to central bank liquidity. In addition, the Fed may request information, reports, or records from CCPs.<sup>168</sup>

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165. Baker, *A Coming Catastrophe?*, supra note 164, at 4.

166. Dodd-Frank Act § 716, 124 Stat. 1648 (codified at 12 U.S.C. § 8305).

167. *Id.* § 1101(a)(B)(i) (emphasis added).

168. *Id.* § 809.

iii. *The Federal Reserve's Regulatory Role: Oversight and Risk Management Standards*

Prior to the Dodd-Frank Act, CCPs were responsible for setting their own risk management standards and creating their own rules.<sup>169</sup> The new transnational *lex mercatoria* recognized CCPs as SROs and that the rules were legally binding on the CCP and its member participants.<sup>170</sup>

The financial regulatory reforms, however, have altered the nature of CCP systems. CCPs are being forced by policy-makers to clear standardized OTC products, which results in more risk being concentrated in individual CCP systems. Therefore, the Fed, the Securities and Exchange Commission (SEC), and the Commodities Futures Trading Commission (CFTC) regulate CCP systems to ensure financial stability.

Furthermore, Chairman of the Fed, Ben Bernanke, has argued that:

[T]he existence of emergency credit facilities for financial market utilities could give rise to moral hazard . . . To minimize moral hazard concerns, the Federal Reserve believes it is essential that the regulatory regime for these institutions include *strong prudential requirements* for credit and liquidity risk management, robust liquidity buffers, the maintenance of adequate amounts of high-quality collateral, and effective membership default procedures.<sup>171</sup>

The Fed's Board of Governors prescribes the standards for systemically important financial market utilities, which includes risk management standards that apply to the "operations" and "conduct" of CCPs. In addition, it monitors the performance and operations of systemically important CCPs.

The SEC and the CFTC may prescribe their own risk management standards in consultation with the FSOC and the Fed. The Fed can object to the rules prescribed by the SEC or the CFTC if it believes that they are "insufficient to prevent or mitigate significant liquidity, credit, operational, or other risks to the financial markets or to the financial stability of the United States."<sup>172</sup> Nevertheless, the FSOC makes the final decision as to risk management standards.

It is mandatory for a CCP to follow the risk management standards prescribed by its regulators.<sup>173</sup> The risk management objectives and principles are outlined as follows: (1) robust risk management; (2) safety and soundness; (3) systemic risks; and (4) stability of the broader financial system.<sup>174</sup> The scope covers: (1) risk management policies and procedures;

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169. See *Lex Mercatoria*, *supra* note 1, at 58–59.

170. See *id.*

171. Ben S. Bernanke, Chairman, Bd. Of Governors of the Fed. Reserve Sys., Remarks at the 2011 Financial Markets Conference: Clearinghouses, Financial Stability & Financial Reform 11 (Apr. 4, 2011) (emphasis added).

172. Dodd-Frank Act § 805, 124 Stat. 1809–10 (codified at 12 U.S.C. § 5464).

173. *Id.* § 805(f).

174. *Id.* § 805(b).

(2) margin and collateral requirements; (3) participant or counterparty default policies and procedures; (4) the ability to complete timely clearing and settlement of financial transactions (settlement risk); and (5) capital and financial resource requirements.<sup>175</sup>

It is logical for the Fed to either have the legal powers to provide emergency liquidity or to be the LOLR to an insolvent CCP. Previously, CCPs were responsible for setting their own risk management standards and have demonstrated an ability to do this successfully since there has never been a major CCP insolvency.<sup>176</sup> Therefore, it would be quite unjust if a situation arose where a CCP became insolvent because the Fed did not set adequate risk management standards after taking power away from CCPs. An equally unjust situation would be to allow CCPs to fail because the Fed did not have a statutory power to act as a LOLR. While some powers have been taken away, CCPs have retained the power to make changes to the clearing house rules, procedures, or operations in emergency situations:

A designated financial market utility may implement a change that would otherwise require advance notice under this subsection if it determines that— (i) an *emergency exists*; and (ii) immediate implementation of the change is necessary for the designated financial market utility to continue to provide its services in a safe and sound manner.<sup>177</sup>

The above section was included because CCPs have a better understanding of the nature of their business than financial regulators. Also, CCPs may have more information than regulators about the exposures of their clearing members in times of market stress. They have the necessary expertise to avert a crisis since their business is to manage risk.<sup>178</sup> For example, LCH.Clearnet and other CCPs successfully wound down Lehman's open positions after its insolvency during the global financial crisis.<sup>179</sup>

#### *iv. Criticisms of Title VIII*

The Dodd-Frank Act should have borrowed the terminology used by the financial community. For example, the term “central counterparty” is absent from Title VIII. Furthermore, the Title does not describe the legal

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175. *Id.* § 805(c). Furthermore, the CFTC and the SEC can determine the types of swaps a CCP may clear, the types of swaps that require mandatory clearing, and which persons are exempt from mandatory clearing. *See id.* § 805(d).

176. CCP failures are rare, but there have been some minor CCP failures in the past in Paris, France (1973); Kuala Lumpur, Malaysia (1983); and Hong Kong, China (1987). Hills et al., *supra* note 8, at 129–30.

177. Dodd-Frank Act § 806(e)(2)(A), 124 Stat. 1813 (codified at 12 U.S.C. § 5465) (emphasis added).

178. *See generally Lex Mercatoria, supra* note 1; Kroszner, *supra* note 3.

179. *See generally* NORMAN, *supra* note 22.

ramifications of accessing the discount window and obtaining borrowing privileges: are these borrowing privileges ELA or LOLR powers? Further, the statute does not even use the term LOLR, which is a term of art in the banking community.

v. *General Observations*

In sum,

*Dodd-Frank* alters the statutory framework but does not significantly change the *status quo*. Prior to regulatory reform, CCPs were eligible to borrow from the Federal Reserve only under emergency circumstances through § 13(3); after *Dodd-Frank*, clearinghouses are eligible to receive Federal Reserve credit only under emergency circumstances through the discount window. Thus, *Dodd-Frank* changes the mechanism through which clearinghouses may borrow but does not make it any easier or harder for CCPs to obtain central bank credit.<sup>180</sup>

It is evident that Title VIII closely resembles its predecessor, § 13(3) of the Federal Reserve Act. There is no reason to assume that the Dodd-Frank Act will create moral hazard if there was none before the regulatory reforms. CCPs are designed to manage risk, and they will still be able to do this under the Dodd-Frank Act.<sup>181</sup>

**B. THE LAW IN CANADA: THE BANK OF CANADA**

**1. The Payment Clearing and Settlement Act, 1996**

Canada has been praised by financial regulators around the globe for having an excellent financial regulatory framework. The Payment Clearing and Settlement Act<sup>182</sup> (PCSA) was introduced in 1996 in order to increase “the certainty surrounding the legal arrangements governing the operations of designated clearing and settlement systems.”<sup>183</sup>

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180. Kress, *supra* note 9, at 92 (emphasis added).

181. Therefore, Colleen Baker may have exaggerated when she stated that

[a]rguably, the most critical issue of Title VIII from a public policy perspective is whether expansion of access to the Federal Reserve’s discount window in emergency circumstances could contribute to the mispricing of the financial risk, particularly tail risk, involved in the financial market activities surrounding the financial transactions cleared and settled through certain market utilities, whether OTC derivatives, repos or other financial transactions and, if so, how to appropriately address this issue.

See Baker, *A Coming Catastrophe?*, *supra* note 164, at 26. For further information about Baker’s research, see Baker, *The Federal Reserve As Last Resort*, *supra* note 164.

182. Payment Clearing and Settlement Act, S.C. 1996, c. 6 (Can.). The current version was last amended on June 22, 2007. It was updated by the Budget Implementation Act, S.C. 2007, c. 29 (Can.).

183. CPSS OF THE GRP. OF TEN COUNTRIES, PAYMENT AND SETTLEMENT SYSTEMS IN SELECTED COUNTRIES 39 (2003).

First, it ensures that netting agreements in clearing arrangements are given priority over domestic insolvency laws in the event that a CCP clearing member defaults on its obligations due to insolvency.<sup>184</sup> Second, it allows a CCP to realize any collateral of an insolvent clearing member.<sup>185</sup> Third, and most importantly, it gives the Bank of Canada powers to oversee payment and other clearing and settlement systems in Canada for the purposes of controlling systemic risk. The Bank of Canada's role is "to provide for the supervision and regulation of such clearing and settlement systems in order to control risk to the financial system in Canada and promotes its efficiency and stability."<sup>186</sup>

The PCSA gives the Bank of Canada the power to designate a particular clearing and settlement system which it believes is capable of posing systemic risk so that the system becomes subject to oversight by the central bank.<sup>187</sup> Section 7 provides the Bank of Canada with discretionary authority to act as the LOLR to a designated clearing and settlement system.<sup>188</sup> Section 7 provides that:

The Bank *may* do all or any of the following things in relation to a designated clearing and settlement system and its clearing house:

- (a) provide a *secured or unsecured guarantee* of settlement by participants;
- (b) make *liquidity loans* to the clearing house and the central counterparty; and
- (c) act as the *central counter-party* to the participants.<sup>189</sup>

Furthermore, section 12(a) provides that the Bank of Canada may "be a participant and participate in the loss-sharing mechanism."<sup>190</sup> This suggests that the Bank can provide emergency lending assistance to the CCP.

It is surprising that other academics who have commented on the legal aspects of the PCSA have not mentioned the importance of these provisions.<sup>191</sup> The Canadian Parliament should be commended for introducing such a wide power allowing the Bank of Canada to bail out a CCP that is considered too big to fail. Section 7 was drafted broadly in order to provide the Bank of Canada wide discretionary authority to provide ELA or LOLR services to an illiquid or insolvent CCP. Similar to the Dodd-Frank Act, however, the provisions lack legal clarity.

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184. Payment Clearing and Settlement Act, S.C. 1996, c. 6, § 13(1)(a) (Can.).

185. *Id.* § 13(1)(b).

186. *Id.* pmb1.

187. *Id.* § 4(1).

188. *Id.* § 7.

189. *Id.* (emphasis added).

190. *Id.* § 12.

191. Bradley Crawford, *The Payment Clearing and Settlement Act, 1996*, 28 CAN. BUS. L.J. 1 (1997); The Payment Clearing and Settlement Act, S.C. 1996, c. 6, § 8 (Can.).

Section 7(a) presumably allows the Bank of Canada to guarantee the obligations of the clearing members, whether they provide collateral or not (secured or unsecured). This provision is unfortunate, since it introduces moral hazard into the system. A central bank should never be allowed to bail out an insolvent clearing member, especially without providing adequate or liquid collateral. The central bank can only bail out the CCP, since it is the principal to every transaction.

Section 7(b) allows the central bank to make a “liquidity loan” to a CCP.<sup>192</sup> It does not specify under what conditions or how the central bank can provide liquidity, and it suggests that liquidity can be provided in an emergency or non-emergency situation.

Section 7(c) suggests that the central bank will guarantee all the obligations of an insolvent CCP by assuming all the CCP’s outstanding obligations and becoming the CCP itself. Once again, it does not provide any details on how or when it would provide this kind of service. Therefore, section 7 is ambiguous, and the PCSA or the Bank of Canada Act<sup>193</sup> should be amended to clarify these issues.

### **C. THE LAW IN THE EURO-ZONE: THE EUROPEAN CENTRAL BANK AND THE NATIONAL CENTRAL BANKS OF THE MEMBER STATES**

The proposed European Market Infrastructure Regulation<sup>194</sup> (EMIR) of the European Commission does not provide the European Central Bank (ECB) with the legal power to extend liquidity assistance to CCPs that face liquidity or insolvency problems. Instead, the National Central Banks (NCBs or singularly NCB) of the member states continue to have the power under The Treaty on the Functioning of the European Union<sup>195</sup> and the Statute of the European System of Central Banks and the European Central Bank<sup>196</sup> to bail out CCPs at their discretion in accordance with their national laws and regulations. It is probable, however, that the ECB will gain new legal powers to regulate systemically important CCPs operating in the Euro-zone.

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192. The Payment Clearing and Settlement Act, S.C. 1996, c. 6, § 7(b) (Can.).

193. Bank of Canada Act, R.S.C. 1985, c. B-2 (Can.).

194. *Proposal for a Regulation of the European Parliament and of the Council on OTC Derivatives, Central Counterparties and Trade Repositories*, COM (2010) 484/5 final (2010) [hereinafter *EMIR*].

195. See Consolidated Version of the Treaty on the Functioning of the European Union art. 127, Sept. 5, 2008, 2008 O.J. (C 115) 47 [hereinafter *EC Treaty*], available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:115:0047:0199:en:PDF>.

196. See Protocol (No. 4) on the Statute of the European System of Central Banks and of the European Central Bank art. 22, 2008 O.J. (C 115) [hereinafter *ESCB Statute*], available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:12008M/PRO/04:EN:HTML>.

## 1. The Current Law: European Central Bank and National Central Bank Oversight Powers

### *i. The Treaty on the Functioning of the European Union and the Statute of the European System of Central Banks and the European Central Bank*

The Treaty on the Functioning of the European Union and the Statute of the European System of Central Banks and the European Central Bank provide the ECB with a mandate to conduct monetary policy in the member states which use the euro as their national currency.<sup>197</sup>

Article 127(2) of The Treaty on the Functioning of the European Union provides that the European System of Central Banks (Eurosystème), which is composed of the ECB and NCBs, have the task of promoting the “smooth operation of payment systems.”<sup>198</sup> Furthermore, oversight has been assigned to the Eurosystème under article 22 of the ESCB Statute: “The ECB and national central banks *may* provide facilities, and the ECB *may* make regulations, to ensure efficient and sound clearing and payment systems within the Union and with other countries.”<sup>199</sup>

Oversight is not mandatory, however, under the current EU law. More recently, a policy paper by the ECB entitled *Eurosystème Oversight Policy Framework*<sup>200</sup> has stated that the Eurosystème banks should be responsible for overseeing “clearing, payment, and settlement systems.”

In addition, the ECB has proposed that certain amendments should be made to the EMIR, as expressed in a detailed “opinion.”<sup>201</sup> In the ECB’s opinion, the Eurosystème should gain clear oversight powers over systemically important CCPs.<sup>202</sup> The ECB is concerned that the proposed regulation does not provide the ECB and NCBs with the necessary statutory powers to oversee and regulate the operations of CCPs.<sup>203</sup> The ECB argues that “the proposed regulation aims to promote *financial stability* in the OTC derivatives markets from a prudential supervisory point of view. Central banks have a statutory role and responsibilities to safeguard financial

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197. EC Treaty, *supra* note 195, at 127(2); ESCB Statute, *supra* note 196, at 19.

198. See ESCB Statute, *supra* note 196, at 3.1 (mirroring EC Treaty, 2008 O.J. (C 115) 102, art. 127(2)); ESCB Statute, *supra* note 196, at 3.3 (referencing the Eurosystème’s oversight powers in accordance with EC Treaty, 2008 O.J. (C 115) 102, art. 127(5)).

199. ESCB Statute, *supra* note 196, at 22 (emphasis added).

200. European Cent. Bank, *Eurosystème Oversight Policy Framework*, at 2 (July 2011), available at <http://www.ecb.int/press/pr/date/2009/html/pr090220.en.html>.

201. *Opinion of the European Central Bank on a Proposal for a Regulation of the European Parliament and of the Council on OTC Derivatives, Central Counterparties and Trade Repositories 1* (Jan. 2011) [hereinafter *ECB Opinion*], available at [http://www.ecb.europa.eu/ecb/legal/pdf/en\\_con\\_2011\\_1\\_f.pdf](http://www.ecb.europa.eu/ecb/legal/pdf/en_con_2011_1_f.pdf).

202. *Id.* at 3–4.

203. *Id.* at 2 (“The ECB stresses the need to ensure that CCPs are strictly regulated.”).



stability as well as for the safety and efficiency of financial infrastructures.”<sup>204</sup>

This view is in accordance with the CPSS-IOSCO *Recommendations for Central Counterparties*, which suggest that financial regulators and central banks should regulate, supervise, and oversee CCP operations on similarly equal footing.<sup>205</sup>

For a contrary view, Jeremy Grant has reported that

Members of the British Parliament have argued that the EU should not be permitted to regulate CCPs because the EU has insufficient resources to bail-out a failing CCP. Instead, the members of Parliament prefer that CCPs be regulated by the countries in which they are located, since the host countries could provide support through their central banks.<sup>206</sup>

Notwithstanding this comment, it is submitted that the Eurosystem should be closely involved with setting the relevant technical standards, guidelines, and recommendations for CCPs that are provided for in EMIR.<sup>207</sup> Furthermore, EMIR should clarify the specific roles for the ECB and NCBs with respect to providing ELA to an insolvent CCP which is considered too big to fail.

ii. *The Role of the European Central Bank and the National Central Banks in the Provision of Lender of Last Resort and Emergency Liquidity Assistance*

ELA is not a Eurosystem function.<sup>208</sup> The national laws of a particular member state will determine whether the NCBs have discretionary authority to provide ELA to an insolvent CCP which is operating in its jurisdiction. According to the ECB, LOLR and ELA are tasks of the NCBs.<sup>209</sup> The current European law, however, expressly states that the ECB and NCBs can only provide LOLR and ELA facilities to “credit institutions.” Article 101 of The EC Treaty specifies that

1. Overdraft facilities or any other type of credit facility with the ECB or with the central banks of the Member States . . . in favour of [European Union] institutions or bodies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States shall be

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204. *Id.* at 1 (emphasis added).

205. The RCCP, however, does not mention whether a CCP should have access to central bank liquidity or not. See RCCP, *supra* note 13.

206. See Kress, *supra* note 9, at 80 n.167 (quoting Jeremy Grant, *Lords Raise Questions Over Clearing Houses*, FIN. TIMES, Mar. 31, 2010, <http://www.ft.com/intl/cms/s/0/da3f59fc-3cfe-11df-bbcf-00144feabdc0.html#axzz1s1xzfsi5>).

207. See EMIR, *supra* note 194, at 2.

208. ECB, FIN. STABILITY REV., Dec. 2006, at 172.

209. ESCB Statute, *supra* note 196, at 14.4.

prohibited, as shall the purchase directly from them by the ECB or national central banks of debt instruments.

2. Paragraph 1 shall not apply to publicly owned *credit institutions* which, in the context of the supply of reserves by central banks, shall be given the same treatment by national central banks and the ECB as private credit institutions.<sup>210</sup>

This expressly excludes central banks from providing an insolvent CCP with any kind of liquidity, unless they are designated as “credit institutions.”

Legislation in France and Germany has responded to this by designating CCPs as credit institutions, thereby giving them access to central bank liquidity. In France, the Monetary and Financial Code<sup>211</sup> provides that clearing houses operating in France “*must* have credit-institution status.”<sup>212</sup> This allows a CCP located in France (e.g., LCH.Clearnet SA) to gain access to emergency liquidity at the Banque de France.

Germany takes a more liberal approach. Section 32 of The Banking Act of the Federal Republic of Germany *permits* a CCP operating in Germany to obtain a license to operate as a credit institution.<sup>213</sup> The CCP will thereafter receive regulatory supervision and oversight from the German Federal Financial Supervisory Authority (BaFin)<sup>214</sup> and the Bundesbank.<sup>215</sup> Recognition as a credit institution makes a CCP located in Germany, such as Eurex Clearing AG and European Clearing Commodity AG, eligible to receive ELA from the Bundesbank.<sup>216</sup>

Additionally, the ECB has suggested that the definition of credit institution<sup>217</sup> in EU legislation could be amended to ensure that CCPs are classified as credit institutions with a limited purpose banking license.

210. EC Treaty, *supra* note 195, at 101 (emphasis added).

211. MONETARY & FINANCIAL CODE art. L442-1 (Fr.) (“The clearing houses oversee the positions, the margin calls and, when applicable, the automatic settlement of positions. They must have *credit-institution status*. Their operational rules must have been approved by the Financial Markets Council.” (emphasis added)).

212. *Id.* (emphasis added).

213. *Gesetz über das Kreditwesen* [KWG] [Banking Act], Dec. 8, 1999, Federal Law Gazette I No. 54 at 2384, § 32 (Ger.).

214. BaFin is short for *Bundesanstalt für Finanzdienstleistungsaufsicht*. IMF COUNTRY REP. 2011, *supra* note 133, at 5.

215. The Banking Act does not contain issues specific to a CCP’s activities. Therefore, the IMF has criticized BaFin for failing to “define[] any specific regulatory regime that covers” the business of CCPs. *See id.* at 5. Furthermore, it has criticized the Bundesbank for failing to provide the legal basis to oversee CCPs as “financial market infrastructures.” *See id.* at 33. The IMF recommends that “[t]he Bundesbank should be provided with the legal mandate to oversee Eurex as a CCP.” *Id.* at 33. Additionally, “BaFin should either issue a new regulatory regime dedicated to CCP activities, or further develop, in the Banking Law, special rules and requirements for CCP activities.” *Id.* at 40.

216. *See id.*

217. Council Directive 2006/48, art. 4(1), 2006 O.J. (L 177) 1, 13 (EC).

Furthermore, it should be noted that the NCBs have the legal discretion to decide whether to provide LOLR or ELA to a credit institution.<sup>218</sup>

These provisions notwithstanding, it is arguable that the ECB has always had the legal authority to provide ELA to a systemically important CCP under article 127(5) of The EC Treaty. This Article states that “[t]he ESCB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the *prudential supervision of credit institutions* and the *stability of the financial system*.”<sup>219</sup>

It is possible to imagine a scenario where the ECB must intervene to provide ELA to an insolvent CCP that is not designated as a credit institution, or a too big to fail CCP that threatens the stability of the EU financial system. This kind of emergency intervention by the ECB would be necessary where the NCB found itself with insufficient resources or refused to bail out the insolvent CCP.

## **2. European State Aid Rules**

Under EU law on state aid, it is unclear whether the granting of aid by a central bank to an insolvent banking institution would be considered illegal. For example, the EU Commission approved a rescue package for Northern Rock by the BoE on December 5, 2007.<sup>220</sup> The ELA did not constitute state aid by the BoE to Northern Rock because it was secured by sufficient collateral and was interest-bearing.

Nevertheless, this example demonstrates that central bank powers should be clearly defined. Campbell and Lastra have stated that “[t]o minimize the risk of moral hazard, it is important to demarcate clearly what the central bank can do and what the central bank cannot do—or should not do—through its LOLR.”<sup>221</sup> Therefore, regulatory reforms should provide legal certainty and ensure that the ECB or NCBs have a discretionary legal authority to bail out an insolvent and systemically important CCP.

## **3. The Proposed Financial Regulatory Reform: The European Market Infrastructure Regulation**

The ECB, in its opinion over EMIR, has recommended that the proposed legislation should expressly provide CCPs with emergency access to central bank liquidity.<sup>222</sup> It argues that the provision of emergency credit is a core function of a central bank, and is linked directly to monetary policy.

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218. ECB, MONTHLY BULL., Feb. 2007, at 80.

219. EC Treaty, *supra* note 195, at 127(5) (emphasis added).

220. See Campbell & Lastra, *supra* note 100, at 469.

221. See *id.* at 470.

222. See *ECB Opinion*, *supra* note 201, at 4.

The proposed regulation does not contain any suggestions about regulating access to central bank credit. More than for other facilities, the decision to provide routine or *emergency credit* is prerogative of a central bank and is linked directly to monetary policy . . . .

Article 10(1) of the proposed regulation requires that CCPs have ‘*access to adequate liquidity*’ as a pre-condition for obtaining authorization to perform services and activities as a CCP. The adequate liquidity referred to ‘could result from access to central bank liquidity or to creditworthy and reliable commercial bank liquidity.’ The ECB considers that commercial bank money does not truly eliminate risks, whilst central bank money does . . . . Therefore, the proposed regulation should not present central bank liquidity and commercial bank money as two equally safe and preferable options.<sup>223</sup>

In sum, EMIR is silent on the issue of whether a central bank should provide a systemically important CCP with ELA. An NCB can attain discretionary power under national laws to decide whether or not to bail out a CCP. As the law currently stands, any intervention by the ECB will be a political issue, comparable to the ECB’s intervention to bail out Greece during the European sovereign debt crisis of 2011.

#### D. THE LAW IN SWEDEN: THE SVERIGES RIKSBANK

Industry experts<sup>224</sup> have concurred that the central bank of Sweden, the Sveriges Riksbank (the Riksbank), has the legal authority to provide CCPs with liquidity support. Sweden was one of the first countries to grant statutory authority in order to provide central bank assistance to an insolvent CCP. CCPs operating in Sweden, such as NASDAQ OMX Stockholm AB (NASDAQ OMX) and the European Multilateral Clearing Facility (EMCF), are subject to supervision by the Swedish financial supervisory authority, the Finansinspektionen,<sup>225</sup> and oversight by the Riksbank.

Although it is generally accepted that central banks can provide assistance, the Sveriges Riksbank Act<sup>226</sup> does not *expressly* include any legislative provisions regarding CCPs or clearing and settlement systems. The Sveriges Riksbank Act bestows upon the central bank the broad responsibility for conducting monetary policy and promoting “a safe and efficient payments system.”<sup>227</sup>

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223. *See id.* (emphasis added).

224. *See generally* CPSS, PAYMENT, CLEARING AND SETTLEMENT SYSTEMS IN SWEDEN, CPSS RED BOOK 97 (2011) [hereinafter CPSS SWEDEN 2011]; Joel Clark, *The Liquidity Access Debate*, 24 RISK 19 (2011).

225. LAG OM VÄRDEPAPPERSMARKNADEN (Svensk författningssamling [SFS] 2007:528) (Swed.).

226. LAG OM SVERIGES RIKSBANK (Svensk författningssamling [SFS] 1988:1385) (Swed.).

227. *Id.*

The CPSS attempted to elaborate by stating that the Riksbank is responsible for the oversight of payment, clearing, and settlement systems, with the ultimate goal of maintaining the stability of the financial system.<sup>228</sup> This mandate “has been interpreted as a general responsibility for looking after the stability of the Swedish financial system. The importance of safe and efficient financial market infrastructures to these objectives predicate the Riksbank’s role as an overseer of the payments system.”<sup>229</sup> In other words, the central bank has an *implied authority* to provide LOLR or ELA to an insolvent CCP that is systemically important in order to ensure the stability of the Swedish financial system.

The language used in the Sveriges Riksbank Act is extremely vague. It is unhelpful that the Sveriges Riksbank Act does not specify whether CCPs are considered “banking institutions,” which includes commercial banks, or “financial institutions.”<sup>230</sup> The Riksbank describes the EMCF and NASDAQ OMX as “credit institutions.”<sup>231</sup> Furthermore, the CPSS states that “[i]n order to conduct trading and CCP clearing of derivatives, NASDAQ OMX Stockholm AB is *authorised as an exchange* and has a permit from Finansinspektionen to conduct clearing operations.”<sup>232</sup> The term exchange, however, is not defined or included anywhere in the Sveriges Riksbank Act.

### 1. The Riksbank as the Provider of Lender of Last Resort and Emergency Liquidity Assistance

It is suggested that the Sveriges Riksbank Act permits the Riksbank to provide liquidity support to CCPs. Liquidity support is expressly provided for in chapter 6 of the Sveriges Riksbank Act:

Article 7. The Riksbank may make available systems for settlement of payments and participate in other ways in the settlement of payments. In order to promote the *function of the payments system*, the Riksbank may grant participants in the system *intraday credit*. Credit may only be granted against *adequate collateral*.

Article 8. In *exceptional circumstances*, the Riksbank may, with the aim of supporting liquidity, grant credits or provide guarantees on special terms to *banking institutions* and *Swedish companies* that are *under the supervision of the Financial Supervisory Authority*.<sup>233</sup>

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228. See CPSS SWEDEN 2011, *supra* note 224, ¶ 4.2.

229. *Id.* ¶ 1.2.

230. LAG OM SVERIGES RIKSBANK (Svensk författningssamling [SFS] 1988:1385), 1 art. 6 ch. (Swed.).

231. *RIX*, SVERIGES RIKSBANK (Sept. 30, 2011), <http://www.riksbank.se/templates/Page.aspx?id=12760>.

232. CPSS SWEDEN 2011, *supra* note 224, ¶ 4.2.1.1 (emphasis added).

233. LAG OM SVERIGES RIKSBANK (Svensk författningssamling [SFS] 1988:1385), 7–8 art. 6 ch. (Swed.) (emphasis added).

It is argued that CCPs in Sweden are implicitly recognized as “companies” that are under the supervision of the Financial Supervisory Authority. Therefore, they can receive ELA in exceptional circumstances.

Furthermore, Joel Clark has elaborated on the effect of these provisions and has reported that the Riksbank provides “liquidity support . . . for the clearing of listed derivatives and cash instruments” by domestic clearer NASDAQ OMX and [EMCF]. At the moment, that support includes *intra-day credit* and the ability to deposit funds overnight, and it would also make *emergency loans* to NASDAQ OMX in a *crisis situation*. The Riksbank is considering a possible extension of its support to include *overnight credit*. . .<sup>234</sup>

Therefore, despite the ambiguity in the language used in the Sveriges Riksbank Act, it is clear that the Swedish central bank has the legal authority to provide LOLR and ELA to systemically important CCPs that are either facing liquidity problems or have become insolvent.

#### E. THE LAW IN THE UNITED KINGDOM: THE BANK OF ENGLAND

The BoE’s responsibility for monetary policy is clearly set out in Part II of the Bank of England Act of 1998.<sup>235</sup> Furthermore, the BoE has long been recognized as having the power to act as LOLR to commercial banks. The BoE has stated that “[i]n the 19th Century the Bank took on the role of lender of last resort, providing stability during several financial crises.”<sup>236</sup> It is surprising, however, that the Bank of England Act makes no mention of this important role.<sup>237</sup> The events that unfolded during the global financial crisis demonstrated that this ambiguity creates legal uncertainty.

##### 1. The Bank of England as the Lender of Last Resort

In 2007, Northern Rock’s liquidity problems created a confidence crisis whereby the stability of the banking sector, and in turn, the entire financial system, was questioned. The BoE responded by setting up various ad hoc facilities as part of its LOLR role.<sup>238</sup> It is possible that some of these facilities could be used in the future for insolvent CCPs.

First, the Special Liquidity Scheme provided immediate aid by injecting liquidity into U.K. banks (up to £200 billion) for up to three years.<sup>239</sup> It ultimately amounted to a repo agreement, with banks exchanging their good

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234. Clark, *supra* note 224, at 21.

235. See Bank of England Act, 1998, c. 11 (Eng.).

236. *History*, BANK OF ENGLAND, <http://www.bankofengland.co.uk/about/history/index.htm#3> (last visited Apr. 14, 2012).

237. See Campbell & Lastra, *supra* note 100, at 473 (“No statutory, or indeed other guidance is given as to how the Bank of England is to undertake its lender of last resort role.”).

238. *Id.* at 484–85.

239. *Id.* at 478, 480.

quality, but illiquid, assets for liquid government bonds. This later became the Discount Window Facility.<sup>240</sup>

Second, the Bank Recapitalization Fund (BRF) provided immediate aid by enabling U.K. banks to increase their capital positions. “Where recapitalization is to be made through the BRF this will be by way of an issue of preference shares by the relevant bank to the government and these are to rank in priority over ordinary shares of the bank.”<sup>241</sup> The preference shares are paid to the government as a penalty with a fixed interest rate of 12 percent.<sup>242</sup>

Third, the government offered to temporarily underwrite any new eligible debt issued by banks which participated in the BRF.<sup>243</sup> Fourthly, the Asset Purchase Facility (APF) increased the availability of corporate credit. The Chancellor of the Exchequer of the U.K. Treasury authorized the BoE to purchase up to £50 billion of “high quality private sector assets.”<sup>244</sup> This facility operated as a form of quantitative easing.<sup>245</sup>

Campbell and Lastra have noted that “the Northern Rock case raises a number of questions about the use of lender of last resort. First, should the fact that it was receiving assistance have been made public?”<sup>246</sup> The announcement that Northern Rock was facing liquidity problems resulted in a run on the bank.<sup>247</sup> This begs the question whether a central bank should make public that it is providing any kind of ELA to a CCP.

Furthermore, Campbell and Lastra have also noted that

[t]he question of what, if any, collateral should be taken by the Bank of England when exercising its lender of last resort function is not currently set out anywhere in law and traditionally it has been left to the Governor<sup>248</sup> and Court of the Bank to decide policy on this. It is suggested that it would be better practice to have legislative provisions which set out clearly what types of collateral will be acceptable and on what terms. . . .<sup>249</sup>

In practice, the above strategy would be very hard to execute. The central bank should have the legal discretion to decide the type of collateral it accepts, since no two emergency situations will ever be the same and flexibility is necessary.

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240. *Id.* at 484–85.

241. *Id.* at 482.

242. *Id.*

243. *Id.* at 484.

244. *Id.* at 485.

245. A CCP cannot use this kind of facility because it will not have any assets left to use.

246. Campbell & Lastra, *supra* note 100, at 477.

247. Prior to bank run on Northern Rock, there had not been a bank run in the United Kingdom for over 150 years.

248. The current Governor of the BoE is Sir Mervyn King.

249. Campbell & Lastra, *supra* note 100, at 472 (footnote added).

## 2. The Proposed Financial Regulatory Reform: The Bank of England as the Regulator of Central Counterparties

The BoE will become the new regulator of systemically important CCPs. In a report entitled *A New Approach to Financial Regulation: Building a Stronger System*,<sup>250</sup> the U.K. Treasury has proposed the creation of two new regulatory entities: first, a Financial Policy Committee (FPC) will form a part of the BoE and will be responsible for the regulation of stability and resilience of the financial system as a whole (“macro-prudential” regulation); and second, a Prudential Regulation Authority (PRA) will operate as an independent subsidiary of the BoE and will be responsible for the regulation of financial institutions that manage significant risks on their balance sheets (“micro-prudential,” or firm-specific regulation).

More specifically, the U.K. Treasury has stated that

other parts of the Bank of England will be responsible for crisis management, including the resolution of failed or failing banks under the special resolution regime (SRR), and regulation of key financial infrastructure such as payment and settlement systems and central counterparties (CCPs). In addition, as part of its central bank responsibilities, it will continue to *provide liquidity* insurance to the financial sector and, where appropriate, *emergency liquidity assistance* (ELA).<sup>251</sup>

....

The Bank is responsible for regulating central counterparty (CCP) clearing houses while the PRA will be responsible for the regulatory capital regime around exposures to CCPs; IOSCO agreements may impact significantly on each of these.<sup>252</sup>

Therefore, the BoE will play an important role in the regulation of systemically important market infrastructure institutions such as payment systems, settlement systems, and CCPs. It should be noted that these passages do not specify whether the BoE will be able to provide an insolvent CCP with ELA or LOLR assistance.<sup>253</sup>

## 3. The Bank of England as the Lender of Last Resort for Central Counterparties

Compared to the other jurisdictions with systemically important CCPs, the United Kingdom has been reluctant to delegate the BoE with the legal

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250. HM TREASURY, A NEW APPROACH TO FINANCIAL REGULATION: BUILDING A STRONGER SYSTEM, 2011, Cm. 8012 (U.K.) [hereinafter HM TREASURY 2011].

251. *Id.* ¶ 2.1 (emphasis added).

252. *Id.* ¶ 7.18.

253. *Id.* ¶ 2.34.



power to provide an insolvent CCP with access to emergency liquidity. U.K. CCPs have argued that they do not need access to liquidity at the BoE.<sup>254</sup> The House of Lords<sup>255</sup> published a report on the future regulation of derivatives markets, stating that

ISDA told us that some CCPs have examined the possibility of central banks providing liquidity lines. We asked LCH.Clearnet whether they believed CCPs should have access to central bank liquidity in the event of a crisis of liquidity at the CCP. They noted that there were times when central bank liquidity would be “beneficial” during a crisis. However, Roger Liddell, CEO of LCH.Clearnet, commented that personally he believed businesses should never rely on the central bank providing liquidity as a last resort, because of the moral hazard issues this raised. The business models of businesses should assume that they would receive no support in the event of a crisis.<sup>256</sup>

Roger Liddell also commented that “[w]e have a huge amount of liquidity and we manage it very conservatively.”<sup>257</sup> Consequently, in the United Kingdom there is still no sign of any legislative developments in relation to the provision of liquidity to insolvent CCPs.

The U.K. Banking Act 2009<sup>258</sup> does not provide any detail on the matter either. It proposes to provide the BoE with “statutory immunity from liabilities and damages arising from acts or omissions in carrying out its responsibilities in relation to financial stability and other central bank functions.”<sup>259</sup> This immunity could provide the BoE with the necessary authority it requires to lend to an insolvent CCP that threatens the financial stability of the United Kingdom. The BoE would receive immunity as long as its actions in the provision of ELA to an insolvent CCP normalized the stability of the U.K. financial system.

## **VII. WHAT EMERGENCY FACILITIES ARE AVAILABLE TO CENTRAL COUNTERPARTIES?**

The global financial crisis has demonstrated that the approaches to liquidity support from central banks vary considerably from jurisdiction to jurisdiction, especially during times of market stress. Nevertheless, some guiding principles should always apply. First, a central bank should not

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254. See HOUSE OF LORDS REPORT, *supra* note 34, at 40.

255. The House of Lords is now the Supreme Court of the United Kingdom.

256. HOUSE OF LORDS REPORT, *supra* note 34, at 40.

257. Clark, *supra* note 224, at 19 (internal quotation marks omitted).

258. Banking Act, 2009, c.1 (U.K.).

259. HM TREASURY, BANK OF ENGLAND & FINANCIAL SERVICES AUTHORITY, FINANCIAL STABILITY AND DEPOSITOR PROTECTION: FURTHER CONSULTATION, 2008, Cm. 7436, at 52 (U.K.). .

“lend[] over an extended period of time.”<sup>260</sup> Second, central banks should accept a wide range of assets as collateral.<sup>261</sup>

The facilities that central banks use to supply emergency liquidity to an insolvent CCP will typically be created on an ad hoc basis. The ECB has suggested in it that

central banks may offer CCPs a range of facilities, possibly including *overnight credit* and *deposit and settlement services*. . . . However, central bank facilities are not designed *per se* to meet the business needs of market infrastructures, and it remains for the Eurosystem and other central banks to determine for themselves which facilities they wish to offer to CCPs and other market infrastructures, and under what terms.<sup>262</sup>

Other emergency liquidity facilities might include ones that are analogous to those that were created by the BoE and the Fed in response to the financial crisis. For example, a central bank could emulate the BoE’s Bank Recapitalization Fund by allowing a publicly-listed CCP that was facing liquidity problems to issue preference shares to the government. This liquidity injection would increase the financial resources available for the CCP in order to avoid failure.

Furthermore, a central bank could offer a traditional LOLR facility, where it exchanged good quality but illiquid assets for cash injections. Although, as previously mentioned, it is hard to imagine a scenario where this could ever occur, since CCPs always demand liquid collateral from their clearing members.

## VIII. SHOULD A CENTRAL BANK BAIL OUT A CENTRAL COUNTERPARTY THAT CLEARS CREDIT DEFAULT SWAPS?

Another policy concern is whether central banks should be allowed to provide ELA to a CCP that clears Credit Default Swaps (CDSs or singularly CDS). CCPs typically clear different types of asset classes which have varying degrees of risk. CDSs have been criticized for being particularly opaque and risky financial assets. There are currently several large CCPs that clear CDSs.<sup>263</sup>

### A. CREDIT DEFAULT SWAPS

A CDS is a special type of derivatives contract with features similar to an insurance contract. It is a promise by one party (a protection seller) to pay another party (the protection buyer) in the event a third party (the

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260. See Campbell & Lastra, *supra* note 100, at 470.

261. *Id.* at 471 n.41.

262. See *ECB Opinion*, *supra* note 201, at 4 (emphasis added).

263. For example, ICE US Trust (U.S.), CME Group (U.S.), NYSE LIFFE/BClear (U.K.), LCH.Clearnet Ltd. (U.K.), ICE Clear Europe (U.K.), Eurex (Ger.), and LCH.Clearnet SA (Fr.).

reference entity) defaults on its debt. The protection buyer pays the protection seller a periodic premium; in exchange, the protection seller pays the protection buyer upon the occurrence of a “credit event,” which is typically defined as the default or insolvency of the reference entity. In other words, the protection seller insures the protection buyer against the loss the protection buyer would suffer if the reference entity defaulted on its obligations. The protection sellers are typically the main clearing members of a CCP, which clears CDSs.

### **B. THE NATURE OF THE DEBATE**

The debate has arisen because CDSs are different from other derivatives. CDSs can experience a unique type of non-performance risk known as “jump-to-default risk.”<sup>264</sup> This type of risk will arise very rapidly during times of market turmoil. It occurs when “expected payouts under CDS contracts escalate rapidly, as credit events for reference entities, such as bankruptcy filings or missed loan payments, occur suddenly. . . . Counterparty non-performance is more likely under jump-to-default scenarios because the obligee [protection seller] may not have sufficient liquidity to make notional amount payments immediately.”<sup>265</sup>

In other words, several protection sellers (which act as clearing members) may suffer liquidity problems<sup>266</sup> simultaneously as companies begin defaulting on their obligations during a financial crisis. Therefore, the CCP which clears these CDSs has assumed the obligations as the CCP and principal to every transaction. It will have to perform its obligations provided that it has sufficient financial resources under its default procedures.

The legislation examined in Part VI in the various jurisdictions does not specify which CCPs the central bank can bail out, nor does it mention the kinds of financial products or assets classes worthy of a bailout. The current approach is to allow the central bank discretionary authority to provide access to liquidity during times of emergency. Therefore, emergency situations can be addressed on an ad hoc basis. Although this approach does not provide legal certainty, it avoids moral hazard.

### **C. THE ACADEMIC OPINIONS**

In her article, *A Coming Catastrophe? The Potential Clearinghouse and Financial Utility “Rescue Plan” for OTC Derivatives, Repos, and Other Financial Transactions in Dodd-Frank’s Title VIII*, Colleen Baker has questioned whether a central bank should bail out an insolvent CCP that

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264. Kress, *supra* note 9, at 56.

265. *Id.*

266. *See id.* at 59–60 (discussing what happened to AIG in September 2008).

clears CDSs.<sup>267</sup> Baker notes that these financial instruments must demonstrate social benefits before a CCP that clears them can receive ELA from a central bank, since CDSs may only be for speculation.<sup>268</sup>

I agree that the social benefit of using CDSs should outweigh the cost of introducing moral hazard into the system; however, I argue that the burden of proving this should not be the responsibility of CCPs. Rather, by forcing CCPs to clear OTC products that they might otherwise not clear, the government should be responsible for proving social benefit.

Contrary to this argument, Jeremy Kress, in his article *Credit Default Swaps, Clearinghouses, and Systemic Risk: Why Centralized Counterparties Must Have Access to Central Bank Liquidity*, “assert[s] that clearinghouse access to central bank credit is crucial, particularly when central clearing of volatile CDSs is required.”<sup>269</sup> He argues that

as a result of the systemic importance of clearinghouses and the increased risks associated with clearing CDSs, CCPs *must be allowed access to emergency credit* from central banks.<sup>270</sup>

....

Despite sophisticated risk management techniques, counterparty risk is an unavoidable feature of CDS markets.<sup>271</sup>

....

[CDSs] are subject to unique dangers that are likely to pose risk management challenges for clearinghouses. Thus, the centralized clearing of CDSs could increase the possibility of a devastating clearing-house collapse. . . .<sup>272</sup>

....

[P]olicymakers must not overlook the potential drawbacks of concentrating systemic risk in CCPs.<sup>273</sup>

....

[A] CCP, as a quasi-utility, concentrates systemic risk in a universal counterparty and may be perceived as “too big to fail” . . . thereby creating moral hazard.<sup>274</sup>

....

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267. Baker, *A Coming Catastrophe?*, *supra* note 164, at 25. For further information about Baker’s research, see Baker, *The Federal Reserve As Last Resort*, *supra* note 164.

268. See Baker, *A Coming Catastrophe?*, *supra* note 164, at 25.

269. Kress, *supra* note 9, at 49.

270. *Id.* at 51 (emphasis added).

271. *Id.* at 60.

272. *Id.* at 51.

273. *Id.* at 71.

274. *Id.* at 72.

[T]he downsides to centralized clearing are likely to be even more pronounced for CCPs that clear CDSs.<sup>275</sup>

Kress justifies his recommendation by arguing that CCPs that clear CDSs must have access to ELA from the central bank because clearing CDSs is extremely risky and could cause a CCP to become insolvent. His argument rests on the systemic importance of CCPs in the financial system and the devastating consequences of failing to provide an insolvent and systemically important CCP with ELA. This reasoning, however, avoids the question of deciding whether CDSs actually provide a social benefit. Furthermore, Kress argues that CCPs that clear CDSs have difficulties in setting the appropriate margin levels in that “[i]f CCPs were to set margin requirements that accurately reflected jump-to-default risk, CDSs would become uneconomic. Therefore, CDS CCPs are likely to be perennially undercapitalized, raising questions about their ability to survive liquidity strains by resorting to default funds.”<sup>276</sup>

#### **D. THE SOCIAL BENEFITS OF CREDIT DEFAULT SWAPS**

There does not appear to be a general consensus on the social benefits and costs of CDSs. Some commentators argue that CDSs should be banned outright since they are speculative instruments that do not amount to anything more than gambling on the well-being of a particular corporation.<sup>277</sup> Others have taken the opposite position and have stated that the potential benefits of using CDSs have undeniably been demonstrated.

Ronald W. Anderson has argued that CDSs can provide

significant *social benefits* in *risk sharing* and *price discovery* . . . . These benefits can be undermined if the contract proves to be prone to manipulations or if it does not deal with counterparty risk adequately . . . . The current push by industry and by regulators toward central counterparty clearing is likely to further reduce counterparty risks very considerably.<sup>278</sup>

Similarly, Conrad Voldstad, the CEO of the International Swaps and Derivatives Association, has argued that there is an “inordinate amount of misperceptions surrounding the CDS market. In spite of all the rhetoric,

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<sup>275.</sup> *Id.*

<sup>276.</sup> *Id.* at 76; REVIEW OF CME GROUP’S CREDIT DEFAULT SWAP MARGIN MODEL AND FINANCIAL SAFEGUARDS FOR CDS CLEARING, RISK MANAGEMENT CONSULTING SERVICE 14 (2009) (“Conceptually, jump-to-default risk can never be *fully* covered without requiring clearing members to collateralize any large net sales of protecting completely. . . . Yet, those benefits must be weighed carefully against certain costs of using a margin system to achieve those ends.”).

<sup>277.</sup> For example, “Warren Buffet famously described derivatives bought speculatively as ‘financial weapons of mass destruction.’” *Credit Default Swap*, WIKIPEDIA, [http://en.wikipedia.org/wiki/Credit\\_default\\_swap](http://en.wikipedia.org/wiki/Credit_default_swap) (last visited Apr. 24, 2012).

<sup>278.</sup> Ronald W. Anderson, *Credit Default Swaps: What are the Social Benefits and Costs?*, 14 FIN. STABILITY REV. 1, 13 (2010) (emphasis added).

CDS remain a robust and effective financial tool for hedging risk or taking on exposures.<sup>279</sup>

Furthermore, it is submitted that CDSs are becoming more transparent. The most notable change is that regulators will now have up-to-date information on the exposures that counterparties have in the CDS markets. CCPs that clear standardized CDSs will be required to report their open CDS positions to trade repositories and data warehouses. This will remove information asymmetries and make it easier for financial regulators to monitor CCPs and take action before jump-to-default risk occurs.

Moreover, the CDS market is not as exorbitant in size as some commentators have led the public to believe. The global CDS market comprises an outstanding notional amount of approximately \$30 trillion.<sup>280</sup> After netting, however, the CDS market was valued at approximately \$1.8 trillion in December 2009.<sup>281</sup> Therefore, adequately capitalized CCPs should be able to handle this level of exposure.

#### E. GENERAL OBSERVATIONS

This Article does not take a position on the social benefits of CDSs, a conclusion that has yet to be determined by regulators and policymakers. While I agree with Kress's conclusion that CCPs that clear CDSs require emergency access to central bank liquidity, my reasoning is different. It is submitted that CCPs have developed as self-regulated risk management institutions with high levels of autonomy. The financial regulatory reforms are now *forcing* CCPs to clear products that they might otherwise not clear. A mandatory requirement without central bank liquidity appears to be a penalty. Therefore, in exchange for their diminished autonomy when it comes to choosing what products to clear, CCPs should be offered access to central bank liquidity.

#### CONCLUSIONS AND RECOMMENDATIONS

An analysis of the legislation that has been passed or proposed in the United States, Canada, Sweden, Germany, France, and the EU demonstrates that there is still a lot of legal uncertainty about CCPs' roles due to poor legislative drafting. This Article has demonstrated that many questions still need to be answered before legal certainty is achieved.

CCPs are not like other financial institutions; their purpose is to neutralize risk. Notwithstanding this important function, CCPs have successfully neutralized risk in the past as self-regulatory organizations. It

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279. Conrad Voldstad, *Critics of Credit Default Swaps Have Got it Wrong*, FIN. TIMES, Nov. 21, 2011, <http://www.ft.com/intl/cms/s/0/9a18e52a-145a-11e1-8367-00144feabdc0.html#axzz1s1xzfsi5>.

280. See MONETARY & ECON. DEP'T, BANK OF INT'L SETTLEMENTS, OTC DERIVATIVES MARKET ACTIVITY IN THE SECOND HALF OF 2009, at 6 (2010).

281. *Id.*

is unlikely that a CCP, which maintains proper default procedures and has access to sufficient financial resources, will ever require liquidity assistance from a central bank.

The financial regulatory reforms that are being passed in various jurisdictions in response to the global financial crisis, however, may alter CCP incentives in the future. Therefore, it is necessary for central banks and financial regulators to assume an oversight and regulatory role over CCP operations. Accordingly, this includes requirements that central banks should be allowed to provide liquidity assistance in the form of LOLR or ELA to insolvent and systemically important CCPs.

A central bank backstop is necessary because a CCP can fail for a variety of reasons. Various jurisdictions have proceeded by passing legislation which provides the central bank with the necessary legal powers to bail out an insolvent CCP.<sup>282</sup> It is recommended that the U.K. legislature take note and follow in the footsteps of its peers in other jurisdictions before it is too late.

CCPs are very dynamic institutions, and they should be able to easily adapt to any challenges and overcome any hurdles that they face in the future. CCPs can change very quickly by contractually altering the clearing arrangement. In the future, it is expected that CCPs will cooperate closely with central banks to draft new contractual facilities to provide CCPs with central bank liquidity in times of crisis and stability.

Since a consensus has not yet been reached as to whether CDSs should provide social benefits, it is recommended that independent CCPs be set up to clear CDSs exclusively. Furthermore, it is better to have multiple small (non-systemically important) CCPs that clear products with similar risks than a few systemically important CCPs that clear multiple asset classes. To accomplish this goal, this would entail sacrificing economies of scale and reducing costs in order to decrease the potential for spreading systemic risk. Accordingly, this sacrifice would reduce the probability that a central bank would have to bail out a too big to fail CCP. It would also ensure that a central bank is not put into a position where it would be forced to bail out a CCP that clears CDSs.

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282. *See supra* Part VI.