The implementation of central clearing counterparty (CCP) in the OTC derivative markets

Dissertation

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Introduction

Central Clearing Counterparty (CCP) or Clearinghouse is not a new concept. The use of clearinghouse in the transaction has been expanded with the innovation of financial instrument, the increasing of financial institutions and the reform after the financial crisis. The first important clearinghouse in the US, New York Clearing House, was organized in 1853 to resolve the burden of interbank payment.[1] From this perspective, the clearinghouse took a function of the central bank to implement intraday settlement among various bank users before the establishment of Federal Reserve system,[2] a typical example is that the CHIPS as an electronic payment system is still a competitor of Federal Reserve's Fedwire system.[3] In this thesis, the central clearing counterparty is restricted to clearing the OTC derivatives, which is developed from the clearing for Exchange Traded Derivatives such as future contracts or options. The CCP will be " the buyer to every seller and be the seller to every buyer."[4] The derivative contracts subjected to clearing are always involved in a large amount of capital which needs high level of risk management. The credit risks causing contracted liquidity intimidates the safety of financial market which is testified through the bank run in 1907, the stock market crash in 1987 and the subprime risk in 2008.

As Kroszer pointed out, the clearinghouse for bank payment is parallel to that for the derivative market. Even though the clearing organizations in banking do not replace the original contract parties in the transaction and never take the guarantor's role,[5] the mechanism of these two types of clearinghouse are similar

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[1] Ben S. Bernanke, Clearinghouses, Financial Stability, and Financial Reform, Speech at the 2011 Financial Markets Conference, Stone Mountain, Georgia, April 04, 2011; Camp, William A. "The New York Clearing House." The North American Review, vol. 154, no. 427, 1892, pp. 684–690, at 687, JSTOR, www.jstor.org/stable/25102389.

[2] Randall S. Kroszner, Can the Financial Markets Privately Regulate Risk? The Development of Derivatives Clearing Houses and Recent Over-the-Counter Innovations (March 1999). Available SSRN: https://ssrn.com/abstract=170350

[3] CHIPS, Federal Reserve Bank of New York, https://www.newyorkfed.org/aboutthefed/fedpoint/fed36.html

[4] General Terms, Basel Committee on Bank Supervision, Capital requirements for bank exposures to central counterparties, p.1, https://www.bis.org/publ/qtrpdf/r_qt1512g.htm

[5] Randall S. Kroszner, Can the Financial Markets Privately Regulate Risk? p. 14

—— the netting and the call of collateral ensuring the fulfillment of obligation and risk control. These mechanisms ensure the normal operation of the CCP while a great volatility in the financial market aroused from the collapse of Lehman Brother and a series of bail-out events afterward.

The Dissertation focuses little on the history and development of clearing organizations but on the legal analysis of the unique functions /mechanisms supporting the CCPs. In the context of the globally financial regulatory reform after the financial crisis, the irreplaceable role of CCP, which distinguishes it from other financial instiutions, shall be systematically explained to better understand why the CCP as a previously privately regulated institution shall prevent the systemic risk. Otherwise, the capacity limitation of the CCP shall be given more consideration by the regulators to CCPs. The collapse of the CCP because of the clearing member default is the core risk existed in the institution. As a systematically important financial institution, the design of recovery and resolution regime aiming at avoiding the bailout of CCP needs to be further explored.

The work is structured as follows:

The first part introduces the reason of systemic risk caused by the credit derivate and illustrates that the CCP is a better way to control the derivatives contract rather than restrict them in the market. Then the analysis of new regulations of central clearing in the Dodd Frank Act Title VII and the EMIR focuses on two issues: which trade shall be mandatory cleared and who will subject to the clearing registration as a market participant.

The second part and the third part are built on the legal structure of CCP. The structure of CCP is actually based on the agreement between market participants. The successful risk management of CCP is achieved by the novation of contract and the segregation of asset. The CCP will be the parties to all the contract through novation and avoids the prohibition of multilateral set-off. The novation process is a legal basis of the CCP to claim the performance of the contract. Except for the novation, the close-out netting provision agreed between CCP and its counterparty shall be protected in the insolvency process. The

second part concentrates on the conflict between the contract close-out netting and the mandatory stay in the insolvency process, and gives reason that why the priority of CCP payment will mitigate the domino effect in the financial market.

The third part focuses on the margin as financial collateral provided to the CCP, because the CCP as a risk neutral will largely depend on the margin to make the payment to its counterparty. The Collateral Derivative (2002/47/EC) supports the title transfer of financial collateral between the parties, but no segregation of assets between the clearing members and its clients will impair the clients' asset right. The choice of segregation of asset to some extent at the CCP level will reduce the risky use of assets of clients and protect their benefits.

The last part of the dissertation will analyze the failure of CCP impacting the financial stability and the governance of it. The conflict of interests in the CCP will be addressed by its inner corporate governance. Once the CCP fails, the effective resolution is essential to avoid the devastating financial instability. The cooperation model is a better way to mitigate the risk, since the widespread change of information is achieved and the supervision authority at the EU level is limited under the Treaty of the Functioning of the European Union.

Chapter 1. The de and re-regulating of Derivatives and Systemic risk

The global financial crisis in 2008 reveals the fragility of financial institutions and lack of ability of financial regulation to prevent systemic risk. Many professionals attribute the crisis to the overuse of complicated financial derivatives, especially credit derivative swap (CDS), which are usually traded on over the counter (OTC) market. In the past, Regulators in US and Europe were faithful disciples of Efficient Capital Market Hypothesis upon which a market could adequately reflect the available information. Based on this Hypothesis, many researches about the use of derivative indicates that the derivative market as a capital intermediation leads to greater liquidity, better price discovery, information assimilation, and market depth of the underlying market. Thereby the deregulation of financial derivatives was accepted by supervisors through changes of law in the US and European countries, such as the US, the UK, and Germany. However, the outbreak of financial crisis reflects the market inefficiency and higher existing counterparty risk in the derivatives market, which makes regulators take notice of the importance of market infrastructure. In history, CCP has successfully managed the crisis that involved Enron (2001) and Lehman Brothers (2008) and helped the market activity to continue despite these events. Given these benefits, leaders at the G-20 Pittsburgh Summit in September 2009 agreed that "all standardized OTC derivative contracts should be cleared through central counterparties by end-2012 at the latest."[6] As a response to the Summit, US Congress enacted Dodd- Frank Act and EU Committee adopted European Market Infrastructure Regulation (EMIR).

Section A. The use and risk of Derivatives

I. The definition and types of Derivatives

[6] Leaders' Statement: The Pittsburgh Summit, September 24-25, 2009, http://ec.europa.eu/archives/commission_2010-2014/president/pdf/statement_20090826_en_2.pdf

The Derivative is a contract which gives rise to rights and obligations in relevant to one or multiple underlying assets. [7] The different names of derivative contracts depend on the type of underlying assets. The underlying includes commodities such as metals, agriculture products or energies; and assets based on debt or equity. Along with the business need, interests rate and credit risk are becoming underlyings upon which parties use the derivative contract to avoid market risk. Besides these traditional types, even the change of weather or the happening of catastrophe can become underlying if there is a need in the market.

In the financial derivative market, the delivery and the payment of underlying will not take place at the same time. The business divided into two types referred to contract. One is unconditional business (Unbedingte Geschäft) such as futures, forwards and swaps; another is conditional business (Bedingte Geschäft) such as options. The result of the previous business is that one party of the derivate contract will assume the liability whatever to buy or to sell the underlying unconditionally. One typical example is the forward contract, which is traded over the counter and the key clauses will be concluded under the willingness of two parties.[8] If a buyer wants to buy steel from the seller and they set a price to buy at a future time. When the time comes, there will be a different amount between the concluded price and the real market price. The buyer will get profit if the reached price is lower than the market price of steel, avoiding more cost of buying raw material. Whereas the seller will get profit, if he could sell the steel at a fixed price rather than a lower price in the market. However, the performance of the obligation under an option contract is conditional, a buyer will submit premium to ensure that he has the option to buy at a fixed price in the future, the obligation of the seller will depend on whether the buyer implements its option. If the price of product rises, the buyer will perform its option, or give up the option because of a lower market price.

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[7] John-Peter Castagnino, Derivatives: The Key Principles, 3rd ed. 2009, Oxford University Press, p.1

[8] Zerey, Finanzderivate Rechtshandbuch, 3rd ed. 2013, Nomos, p.45.

If the derivative market is a two-sided market, the sell-side and the buy-side will trade on the different platform. Some standard contracts are traded on the exchange and one characteristic of standard contract is that the terms of a contract are rarely changed. The users will participate the trade in exchange through a broker rather than directly to be a buyer on the exchange market. But the relationship between investors and brokers is subject to the rule of exchange. On the contrary, the OTC market has no infrastructure to manage the process of trading. The terms of derivative contracts are tailored to the different needs of counterparties and traded directly between them. Besides, the price information of OTC derivative is not accessible by all the market participants. Brokers in the exchange and OTC derivative contract participants are all exposed to the default risk of the counterparty.[9] However, the lack of price transparency and of an orderly market makes the taking of appropriate measures to prevent risk harder. This chapter will focus on the systemic risk caused by the use of OTC credit derivatives.

II. Why to use credit derivatives may cause systemic risk

1.The development of OTC credit derivatives in financial market

From a general perspective, the underlying of credit derivatives is the credit risk. The risk can be explained in an easy way that I owes you something, but the payment obligation could not be satisfied. A classic example is that the bank as creditors give loans and shall be exposed to the credit risk of borrowers. The cost of a bank is high because they loaned by the use of deposit and hold the credit on bank's balance sheet until maturity. In order to transfer credit risk, Bank could sell the loan on the secondary market. However, the corporate loan is a relatively illiquid asset, the syndicated loan seller shall sell the debt at a discount to transfer the credit risk.[10] But the innovation of financial instrument helps bank and other financial institutions to manage their risk. There are two

[9] John-Peter Castagnino, Derivatives: The Key Principles, p. 16

[10] Ali, P.U. 2005, "Credit Derivatives and Synthetic Securitizations: Innovation and Fragility", Banking & Finance Law Review, vol. 20, no. 3, pp. 293-317, at 298.

ways to isolate credit risks: credit derivative swap and credit asset securitization. Even though there are varieties of OTC credit derivatives, CDS is the main constituent of OTC credit derivatives.

After the financial crisis, the CDS and ABS (asset-backed securitization) are always mentioned together by people. Supply and demand is appropriate to describe the relationship between these two items. It corresponds to the reasoning that the people who provide fund want to isolate the credit risk and someone is willing to afford it in this entire market-based credit system.

The process of asset-backed securitization is in fact that an originator (or a debtor) transfers receivables to a special purpose vehicle (SPV). These receivables could be credit or mortgage, and then the SPV issues securities to investors.[11] These originators are usually banks but are not limited to them, because varieties of financial firms could sell their assets also by way of securitization. Traditionally, the assets securitization shall obey to “true sale” principle that the transfer of assets removes originators’ legal title to these assets and isolates investors from the bankruptcy of issuers.[12] However, these investors are exposed to the risk in relevant to underlying assets. From the aspect of originators, they transfer the default risk concerning underlyings to investors. Banks hold the benefit that they move these assets out of balance sheet then can lend more. Unlike securitization process, the CDS agreement between the protection seller and protection buyer is not a transfer of legal right but the economic risk----there is no transfer of the receivables to the protection seller. Instead, the protection buyer pays a premium periodically to the protection seller. If the credit event based upon the CDS contract occurs, the protection seller will assume the credit risk exposed to the buyer by cash settlement or physical settlement.[13]

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[11] Simkovic, Michael, Paving the Way for the Next Financial Crisis (January 1, 2010). Banking & Financial Services Policy Report, Vol. 29, No. 3, 2010. Available at SSRN: https://ssrn.com/abstract=1585955

[12] Nicola Cetorelli, and Stavros Peristiani, The role of Banks in Asset Securitization, Federal Reserve Bank of New York Economic Policy Review, Vol.18, No.2, July 2012, at 48

[13] John-Peter Castagnino, Derivatives: The Key Principles, p. 91

Even though securitization is generally accepted that it can reduce the funding cost, there are some uncertainties in its process. First, the carrying out of a securitization is expensive because it involves several key players during the different steps of structuring, arranging and offering. The rights and obligations of these participants shall be bind by contract and the transaction costs (or agency costs) will be arisen from several contractual relationships. In the process of negotiation, neither could get the complete information from the other party and thus reduce its capacity to control risks.[14] Otherwise, the SPV as a bankruptcy remote entity is uncertainty, because the issue of whether the transfer of assets to SPV meets the true sale principle is probably challenged by the law.[15] In contrast to the securitization, CDS is an unfunded derivative contract only refers to two parties. It is more flexible and can hedge the risk as well. Therefore, CDS is used widespread in the financial market.

CDS was indeed widespread used when it combines with the method of securitization. The drawback of CDS is that CDS market exists only between sophisticated investors and interbank. The reason is that these institutions and investors are most capable of providing unfunded CDS and taking the underlying credit risk. But the financial institutions want to transfer their credit risk to the capital market where has more participants, and keep the flexibility of the use of credit derivatives as well. Synthetic securitization (funded credit derivatives) could meet these demands.

This synthetic financial instrument is called synthetic CDO (collateral debt obligation).[16] CDO divides into the cash CDO that securitizes the traditional debt or loan obligations, and the synthetic CDO that is a securitization of the cash flow

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[14] Zuckerman, Aron M. "Securitization Reform: A Coasean Cost Analysis," Harvard Business Law Review vol. 1, no. 1 (Spring 2011): pp. 303-318, at 317

[15] Paloian v. LaSalle Bank, N.A., 619 F.3d 688 (7th Cir.2010) at 695,696; The US seventh circuit court asserted that the separate entity shall meet a set of requirements, such as "buying the asset, managing the asset in its own interest rather than the debtors and observing corporate formalities" in order to prevent the application of bankruptcy law to the entity.

[16] CDO is just a type of ABS, in the case Dodona I, LLC v. Goldman, Sachs & Co., 847 F.Supp. 2d 624 (S.D.N.Y.2012). at 631, the judgement explained that "collateralized debt obligations are securities backed by a portfolio of fixed-income assets "

of CDS.[17] "In a cash CDO, the credit risk exposure comes from owning a basket of underlying actual securities; while in a synthetic CDO, the credit risk comes from selling credit protection on a basket of underlying securities."[18] To achieve the investment goal of the synthetic securitization, a SPV as an intermediary is created between the bank and investors, and there are two contracts included in the process. The first one is a CDS contract between the Bank and SPV; SPV as a protection seller will sell credit protection to the buyer (Bank) and get the premium from the bank; certainly the SPV suffers the risk of the Bank if the credit event occurs. Then the SPV as an issuer makes an agreement with investors to sell credit-linked notes to them. The principal paid by the investors to SPV could be used as collateral engaged in repo transaction and the investors get the interests based on these collaterals and on the premium paid by banks. If the credit event occurs, investors will suffer the loss which equivalent to the cash settlement amount paid by SPV to the banks. Based upon this structure, the occurrence of credit event has actually no effect on the SPV. This point proves the major difference between cash CDO and synthetic CDO that the bank does not need to transfer the assets out of its balance sheet. For the purpose of reducing the cost of securitization, partially funded synthetic CDOs is also a general used structure in the market.[19] Before the outbreak of financial crisis, some products called CDO^2 or CDO^3 were appeared in the market. The underlying assets of these products are debt securities issued by SPV to investors. These securities are traded between money market fund and can be used as collateral for borrowing, whereas the weaker relationship between these products and underlying assets made the value of these securities hard to find. The use of synthetic CDO accelerates the disintermediation of financial market.

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[17] John-Peter Castagnino, Derivatives: The Key Principles, p. 93

[18] Mehrling, Perry, The New Lombard Street: How the Fed Became the Dealer of Last Resort, Princeton University Press, 2011, p. 127

[19] Ali, P.U. 2005, "Credit Derivatives and Synthetic Securitizations: Innovation and Fragility"; If the synthetic securitization is fully funded by SPV, the cost of issuing debt securities and the premium paid by banks will be higher than the partially-funded one. In the latter, the debt securities issued by SPV take a portion of the whole obligation (5% -15%); and the credit risk of remaining part will be transferred to another bank through a second CDS. However, the right of SPV and its investors are subordinated to that of protection seller of the second CDS. If a credit events occurs, the protection seller of second CDS will not be affected until the depletion of SPV's asset.

2. The venture inherent in the use of credit derivatives and systemic risk

a. The benefits and the adverse effects of the use of credit derivatives

Derivatives can allow businesses to manage their exposure to external influences on their business over which they have no control.[20] Credit derivate has the characteristic of all derivatives and has designed to hedge the credit risk. In the business world, corporations need more funds to expand their business and loan is a major source of funding. If a bank can use CDS to limit its risk (the loss of bank will be capped at the premium provided to the CDS seller), banks will be more likely to make new loans and the corporations are easier to access the liquidity.[21] Similarity, a corporation or an accredited investor can use CDS to transfer their business risks to the protection seller. This is a way that the corporation can access the capital market directly. Another benefit arisen in Partnoy and Skeel's article is that the reveal of the CDS price can provide additional information to the market about the true financial condition of a corporation.[22] Meanwhile, the standardization of derivative contract lower the transaction cost of CDS contract. With the development of the market, synthetic CDO provides a way that investors could purchase variants of financial instruments in a portfolio (in CDO), whereas there is a spread between the price of CDO and the value of underlying assets. Otherwise, the CDS index has emerged in the market, and the CDS could be bought and sell on the trading platform.[23] This product is another choice for the investors as buyers with lower cost than as counterparties of over the counter CDS contract. It means that more and more

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[20]Great Britain, Parliament House of Lords, European Union Committee, The Future Regulation of Derivatives Markets: Is the EU on the Right Track: Report with Evidence, Stationary Office 2010, p.17

[21] The function of credit swaps to hedge risk and to access the capital is explicitly analyzed in Skeel, David A. and Partnoy, Frank 2007, "The Promise and Perils of Credit Derivatives. " University of Cincinnati Law Review, Vol. 75, p. 1019, at 1023, 1024,1025; The three functionalities of credit derivatives are: hedging; speculation and information extraction, Yadav, Yesha. "The Case for a Market in Debt Governance," Vanderbilt Law Review vol. 67, no. 3 (April 2014): p. 771-836.

[22] Skeel, David A. and Partnoy, Frank 2007, "The Promise and Perils of Credit Derivatives. " p.1026

[23] Matt Levine, Banks wanted to keep CDS market to themselves, Bloomberg View, available at https://www.bloomberg.com/view/articles/2015-09-11/banks-wanted-to-keep-the-cds-market-to-themselves; one part of the article is about CDS trading.

investor could be the protection buyers and make profits without holding any underlying credit assets.

Notwithstanding the benefits of credit derivatives, the use of it is a double – edged sword. At first, the credit derivative includes risks that existed in all derivatives, which are the uncertainty of the value of underlying assets and the non-performance of the counterparty of the contract. Furthermore, the separation of economic risks and the legal right leads to the party, usually the bank, who possess the most information of the creditworthiness of borrowers, reluctant to monitor the payment capacity of debtors.[24] Furthermore, since one of the important functions of CDS is speculation, the most of the banks can be protection seller and protection buyer at the same time.[25] They tend to buy more CDS and sell their loan to become a naked creditor. If there are too many CDS contracts and the value of the underlying assets is lower than the amount of CDS contracts, the protection sellers, who sell so many contracts, could not fulfill the obligations if the protection buyers require the actual payment. The synthetic CDO offers great scope for financial speculation because more participants are taking part in credit derivatives transaction. The above mentioned two shortcomings of using credit derivatives are based on the financial participants' behaviors. The incentives and the speculative activities of participants will change the assumption that the speculative asset prices fully reflect the information of the real value of the corporation (the efficient market hypothesis),[26] which is a theoretical basis of the reasonableness of using credit derivatives. In the modern financial world, because of the high interconnection between financial institutions and investors through the innovation of financial

[24] Yadav, Yesha. "The Problematic Case of Clearinghouses in Complex Markets," Georgetown Law Journal vol. 101, no. 2 (January 2013): p. 387-444, at 406

[25] "The 96% of credit derivative exposure was concentrated among five firms: JP Morgan, Goldman Sachs, Citigroup, Morgan Stanley, and Bank of America" ECB (August 2009), "Credit default swaps and counterparty risk", Frankfurt, available at www.ecb.eu; Kress, Jeremy C. "Credit Default Swaps, Clearinghouses, and Systemic Risk: Why Centralized Counterparties Must Have Access to Central Bank Liquidity," Harvard Journal on Legislation vol. 48, no. 1 (2011): p. 49-94, at 55

[26] This hypothesis is explained in Fama's article; Fama, Eugene F. "Efficient Capital Markets: A Review of Theory and Empirical Work." The Journal of Finance, vol. 25, no. 2, 1970, pp. 383–417

instrument, such as securitization and the CDS, the market efficiency and the possible of credit risk will cause a devastating systemic risk.

b. systemic risk

To consider the relationship between credit derivatives and systemic risk, the concept of systemic risk is worth exploring. It seems that the happening of risk is so suddenly as in one night, but the result is not accomplished at one stroke. An exact definition is not applicable for systemic risk, and it can just be described under certain circumstances. The general describe of the risk is that "a trigger event, such as an economic shock or institutional failure (such as bankruptcy or illiquidity), causes a chain of adverse economic consequences—sometimes referred to as a domino effect."[27] In contrast to the traditional "bank-run" situation[28], now the analysis of systemic risk shall focus on the capital market rather than the bank relationship itself. [29]

The new money-market funding system can be called a shadow bank system.[30] In this system, the risk of default of loan is protected by CDS rather than the reserved bank capital, and the liquidity risk is dealt by the collateralization of the securitized loans (such as ABS or ABS-based CDO). These collaterals will be used to borrow money through the method of asset-backed commercial paper (ABCP) or repo.[31] As above mentioned, the bank could loan more money by the use of CDS and the money lent could be securitized and these debt securities can be used as collateral to borrow more money. However, there are two questions: (1)

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[27] Schwarcz, Steven L. "Systemic Risk," Georgetown Law Journal vol. 97, no. 1 (November 2008): p. 193-250, at 198

[28]Mehrling, Perry, The New Lombard Street: How the Fed Became the Dealer of Last Resort, In the chapter 6 the author pointed out that the traditional bank risks mainly are solvency risks and liquidity risk. The former is in relevant to the default of loan, and the latter is about the deposits withdrawals; Schwarcz also describes that the capital buffers of the bank is not enough to pay the withdraws and the other banks may be affected by this event. In the new circumstances (or we can call it shadow banking), the risks are still existing, but shall be treated differently.

[29] Schwarcz, at 200

[30] Financial Stability Board (12 April 2011), "Shadow Banking: Scoping the issue", available at http://www.fsb.org/wp-content/uploads/r_110412a.pdf, shadow banking system can broadly be described as "credit intermediation involving entities and activities outside the regular banking system. "

[31] Mehrling, Perry, The New Lombard Street: How the Fed Became the Dealer of Last Resort, at 119

if an event of credit default happens, and CDS contracts are traded on the market, who will be the last payer of these contracts? (2) Otherwise, under the stress market condition, whether the value of the securities as collateral will fall deeply.

There is a fundamental assumption in the market that claims of investors or repo lenders on these shadow banks (e.g., unsecured institutions) based on the promises by regulated institutions (e.g., Banks) to provide market liquidity or credit support to these shadow banking institutions.[32] These creditors think that they take the risk-free assets. However, the market liquidity for these assets is provided by CDS. The banks are also as dealers to build the CDS trade market and use converse CDS contracts to hedge their economic risks. The correlation between these contracts makes these banks interconnected with each other. They thought that they have made a matched book by the buy and sell activities and get profits from the spread of prices. But they do not realize that they may take the liquidity risk by themselves. If one institution defaults, the event will quickly affect the payment capacity of its counterparty. Also the counterparty of the derivative contracts will use the collateral provided by the default party to meet the obligation, because this non-default party owed obligations to its counterparty as well. Therefore, these market participants do not care about the real payment ability of their counterparties but the achievement of fast payment. They are more likely to sell the collateral provided by the counterparties, which causes the fire sale of the collateral in the market. If all financial institutions do not hold enough assets to pay the debt and they could not borrow the new money because of the lack of market liquidity, the inevitable result is the collapse of the whole system.

As mentioned before, the overuse of credit derivatives lit the fuse on the crisis. But what are the reasons for the abusive use of these derivatives. The fall of market price reflects some degree of market inefficiency, which means that

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[32] Daniel K. Tarullo (Nov22, 2013), "Shadow Banking and Systemic Risk Regulation", a speech at the Americans for Financial Reform and Economic Policy Institute Conference, available at https://www.federalreserve.gov/newsevents/speech/files/tarullo20131122a.pdf, It points out regulated institutions such as banks explicit or implicit support shadow banks. The explicit method can be credit enhancements in the contract provisions; the implicit one is to make the investors believe that banks will support to maintain the value of franchise.

information asymmetries have existed between the loan lender and borrower, the investor of debt securities and the underwriters, the CDS protection buyer and protection sellers. Gilson and Reinier's article analyzes the causes of market inefficiency before crisis insightfully.[33] Take the subprime crisis of US as an example, the banks as lenders are obliged to examine the creditworthiness of its borrowers; however, the loose credit policy and the transfer of economic risks through CDS result in the lack of motivation of lenders to monitor the borrowers. In addition, the policy and securitization make the cost of credit cheaper, more people are willing to borrow and buy houses and the increasing price of underlying assets (e.g., the house) disguise the declining quality of mortgaged backed securities (RMBS).[34]

If the price of RMBS does not reflect the deteriorating quality of its mortgage pools, it can be imagined that the two derivative methods (CDO and CDS) based upon the cash flow of RMBS would not be accurately priced. Some CDS protection seller, such as insurance corporation AIG, who could not transfer their risk to the other may agree to insure the CDS contract, because they think that the default event will not be happened. The CDO bonds which are the securitized CDO asset including the RMBS assets, much of them are mid-and lower tranche RMBS, will also not be correctly priced. However, the investors of CDO bonds would not be informed that the underlyings of CDO assets are just lower trenched RMBS. Because of the lack of disclosure between these parties, these hidden information are hard to be incorporated on the price and the exact price of the value is distorted. Yadav in her article put forwards that the insider trading and more information disclosure among derivative players might promote the market efficiencies.[35] These dealers spread market liquidity through

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[33] Gilson, Ronald J., and Reinier Kraakman. "MARKET EFFICIENCY AFTER THE FINANCIAL CRISIS: IT'S STILL A MATTER OF INFORMATION COSTS." Virginia Law Review, vol. 100, no. 2, 2014, pp. 313–375.

[34] Gilson, Ronald J., and Reinier Kraakman, at 31, the authors analyze what information fail to enter prices at its intermediate level, one reason is the declining quality of mortgage.

[35] Yadav, Yesha. "Insider Trading in Derivatives Markets," Georgetown Law Journal vol. 103, no. 2 (January 2015): p. 381-432; (Viral V. Acharya, 2007), Insider trading in credit derivatives, Journal of Financial Economics 84 (2007) 110–141, at 113. The common point in the research is that the increasing number of insider may spread the information to the market rapidly and mitigate the bid-ask spread.

credit derivatives in high tranches into the low tranches and have to afford the result by themselves. The price bubble will burst starting from one default event occurred in the market.

From the above analysis, it could be seen that how is the risk accumulated before this crisis including the overuse the credit derivative and the impact of increasing the money supply to the underlying assets of the debt securities, and the market inefficiency leading to a wrong evaluation of asset risks aggravate the procyclicality dimension of systemic risk. From another side, the contagion effect is also proved to be an essential element of the occurring of systemic risks. This part tries to examine the relationship between the use of credit derivatives in the OTC market and the systemic risk rather than a broad range discussion of the interactions between the financial institutions, macroeconomy and monetary policy. The theory of systemic risks can be applied to many cases, but the analysis of the abstract definition from macro impact to micro impact can not adequately reflect the elements such as the interconnection between financial institutions and the financial fragility caused by credit derivatives, which is a reason for the crisis resulting in systemic risk.

Section B. The regulation of Derivative Contract in history

The spillover effect of systemic risk of the financial market and its harm to the real economy invokes the denouncement of the unregulating OTC market and the safe harbor rules for derivative contracts. To preventing systemic risk, the financial regulation is a broad definition referring to many financial institutions. We also know that the promulgation of regulation is always lag behind the financial innovation. Thus every change of the financial regulation is a delayed reaction to the crisis but means a deeper understanding of the financial market. This part will concentrate on the historical change of derivative market's regulation to better explore the reason and policy intention implied in the new regulation after the financial crisis.

I.The regulation of Derivative contract in history

"It was an illegal gambling, but now it is a legalized gambling without regulatory controls."[36] This comment quoted from a wall street professional is a good summary of the history of changing derivative market's regulation. Most countries acknowledge the legal status of derivatives contract except the Islamic world. Whereas after the outbreak of financial crisis, the legitimate nature of the derivatives as wagering contracts is still under dispute.[37] The wagering contract can be described as two people mutually agree that, dependent upon the determination of a future uncertain event, a sum of money or some other valuable thing will become the property of one or some of them.[38] Neither of the contracting parties having any other interest in that contract than the sum or stake he will win or lose, and there being no other consideration for the making of such contract by either of the parties. The legal effect of these contracts, as prescribed in the section 18 of Gaming Act 1845 in England, is deemed null and void.[39]

1. The restriction of derivatives contract in common law countries

The important issue here is what benefits the law want to protect if a wagering contract or a difference contract was prohibited. There is a long philosophical and legal hostility in the western traditions against mere gambling on price. For example, the commerce limited by human need and an unregulated drive for wealth that exceeds only the satisfying of human need are divided by the opinion of Aristotelian.[40] This idea expresses a kind of moral judgment and has conflict

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[36] The Bet that blew up wall street, http://www.cbsnews.com/news/the-bet-that-blew-up-wall-street/ (26.10.2008)

[37] Peter Koslowsiki, The Ethics of Banking: Conclusions from the Financial Crisis, Volume 30 of Issues in Business Ethics, Springer Science & Business Media 2011, at 131

[38] 62 N.Y.Jur.2d Gambling §2 I. Definitions, Westlaw

[39] Simon James, The law of Derivatives, CRC Press 2014, at 22

[40] Brian M.McCall, Gambling on our Finance Future: How the Federal Government fiddles while State Common Law is a safer bet to prevent another financial collapse, Arizona State Law Journal, Vol. 46, 2014, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2384965, page 11

with capitalism.[41] In early English and American court decision, the different contract will be seen as a wagering contract (just *price speculation*) and was prohibited because it contravenes public policy.

At that early time, there were no complex derivative products and the different contract was similar to futures and options. The characteristic of the different contract is that the parties perform their obligation not by the delivery of goods but by paying the difference between the contract price and the market price.[42] This agreement was judged invalid in the 1884 case Irwin v. Willar[43] by the US Supreme court. The ratio decidendi of the court is through the performance way of parties to judge the real intention of them.[44] The contract is invalid because the intention of it is void. In other words, the intention violates public policy. According to this reasoning, it could be assumed that if the intention is corrected, then the contract will be valid. The subsequent case White v. Barber confirmed this point that the contract is not invalid if there is a bona fide intention to deliver.[45] The issue could be discussed further whether a person does not prior expose to the risk of a different contract, but this person being a party of the contract could avoid harm arised from other reasons to the person, is a justice reason.

From this aspect, the intention of hedging similar to insurance is permitted. However, under the common law rules and The Commodity Exchange Act (CEA) passed in 1936, the future contract with hedging intention shall be traded on an exchange market.[46] The only permitted way to trade on an OTC (non-exchange)

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[41] Max Weber, The Protestant Ethic and the Spirit of Capitalism, translated and edited by Peter Baehr and Gordon C. Wells, Penguin, 2002; In the chapter 2, The author regarded the capitalism as a ultimate purpose of man's life rather than a way of subsistence, the traditionalism is strongly oppose to the spirit of capitalism.
[42]Lynn A. Stout, Why the Law Hates Speculators: Regulation and Private Ordering in the Market for OTC Derivatives, 48 Duke Law Journal 701-786 (1999), at 715
[43] Irwin v. Williar and another, Supreme Court of the United States ,4 S.Ct. 160, March 3, 1884
[44] Id, Irwin v. Williar
[45] White v. Barber, Supreme Court of the United States, 123. U.S 392, Dec 5, 1887
[46] Section 4a. (1) of CEA 1936 promulgated that „ Excessive Speculation in any commodity under contracts of sale of such commodity in future delivery.....causing sudden or unreasonable fluctuations...is an undue and unnecessary burden on interstate commerce in such commodity“. But Section 4a. (3) promulgated that „no order issued under para (1) shall apply to transactions which are shown to be bona fida hedging transactions which means sales of any commodity for

market is that real delivery is the way to settle the contract. The regulators considered that the function of exchange could restrict the intention of speculation because of the rules of exchange including membership requirements, margin requirements and position limits, reducing the manipulated activities by speculators and maintaining the stabilized contract price.[47] Therefore the use of derivatives contract is restricted but not absolutely prohibited by law.

CDS as a derivative contract has not emerged until the 90s of last century. At the mean time, the financial regulations of derivatives came to loose. As mentioned above, CDS as a credit derivative can prevent credit risk so that the protection buyer can hedge the risk by paying the premium to the protection seller. The intention of hedge rather than speculation is justifiable. Therefore, this contract shall not be seen as a wagering contract but appears like an insurance contract. However, one important element of the insurance contract is that the insured has an "insurable interest".[48] This interest is similar to the payment claim held by protection buyer because he has loaned money and has a direct interest in the underlying asset. Even though a CDS contract is a risk-sharing scheme, the protection buyer is not required to hold an "insurable interest" as the insured of contract, and CDS contract is assignable in the market. If a protection buyer without interest in the underlying contract can be a party of CDS (which can be called as a naked CDS), the intention of hedging is not in existance and the CDS contract is under the suspicion of being a wagering contract. From the above reasons, The CDS contract may still under the check of the rule against wagering if it is an OTC contract (an objective standard) without hedging intention (a subjective standard).

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future delivery on or subject to the rules of any board of trade...." http://uscode.house.gov/statviewer.htm?volume=49&page=1491#

[47] "Federal Regulation of Commodity Futures Trading," Yale Law Journal vol. 60, no. 5 (May 1951): p. 822-850, at 844,845,846, the article illustrates detailed that the government controls the excessive speculation via trading limits and margin requirement.

[48] See generally 44 C.J.S. Insurance § 318, Westlaw „A person usually has an insurable interest in the subject matter insured where he or she will derive a pecuniary benefit or advantage from its preservation, or will suffer a pecuniary loss or damage from its destruction, termination, or happening of the event insured against."

2. The restriction of derivatives in civil law country

a. The contract of difference is subject to the wagering contract

The rule against wagering contract （§ 762 BGB) and difference contract (§764 BGB) is also in the German civil code. Except the criticism that the wagering contract will bring an uncertain profit seem dangerous and the parties could not foresee this uncertainty, Scholars offer no other explanation to make a difference between the wagering contract and other aleatory contracts.[49] The legal effect of this contract is prescribed in article 762 of German Civil Code „gaming and betting create no obligation. What has been performed on the basis of the game or the bet would not be claimed back on the ground that the obligation did not exist. [50] For the financial derivative contract, it is also agreed that a contract with naked speculative intention will subject to the defination of wagering[51]. Otherwise, even though the contract for difference (764 German Civil Code) will not be directly judged as a wagering contract, the explanation of the Art 764 based upon the defination of "game" (Spiel) in Art 762 is still a main rule.[52] In what circumstances a difference contract is seen as a wagering contract was analyzed by the German court whose legal reasoning is very similar to the court in the US.

In a case judged by KG Berlin 2002, a French credit institution terminated the spot transaction with a client and claimed to get payment of it because the client's account is in negative balance.[53] A speculated day trading spot transaction here would not be seen as a normal spot transaction (gemeinte

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[49] MüKoBGB/Habersack BGB § 762 Rn.4
[50] §762 BGB, Durch Spiel oder durch Wette wird eine Verbindlichkeit nicht begründet. Das auf Grund des Spieles oder der Wette Geleistete kann nicht deshalb zurückgefordert werden, weil eine Verbindlichkeit nicht bestanden hat.
[51] Jung in Fuchs, WphG, Abschnitt 8, §37e 4 Rn 10, p 1828, 2009
[52] § 764 BGB" Wird ein auf Lieferung von Waren oder Wertpapieren lautender Vertrag in der Absicht geschlossen, dass der Unterschied zwischen dem vereinbarten Preis und dem Börsen- oder Marktpreis der Lieferungszeit von dem verlierenden Teile an den gewinnenden gezahlt werden soll, so ist der Vertrag als Spiel anzusehen. Es gibt Ausnahmen in den §§ 58-70 Börsengesetz.
[53] KG Berlin, Urteil vom 7.5. 2002-17 U 95/01 (LG Berlin) (nicht rechtskräftig)

Kassageschäfte).[54] In this case, there is no real exchange of two currencies rather than paying the difference price between two currencies to make the balance. The contract is called hidden contract of difference. In accordance to the first sentence of Art 764 BGB, if parties agreed just to pay the difference price to the profited party, the contract will be directly seen as a wagering contract. However, the intention of speculation is an important element to decide whether a contract is a hidden contract of difference. The hidden one is still subject to the rule in Article 764. The German law emphasizes the knowledge of another party, if only one party has the intention to make a contract of difference.[55] Yet two willingnesses to making a hidden contract of difference is not the necessary condition here.

There is also an exception to contract of difference. But in this case, § 58 stock Exchange Act (BörsG) is not applied here, because the spot transaction engaged by parties is not an exchange future transaction business. This exception is similar to the US rule and makes the contract of difference with legally binding effect. The conclusion is that if a speculative hidden contract of difference is not subject to the scope of the exception, the article § 762 and § 764 are still applicable to the case. The speculative intention is a subjective criterion and a contract in the exchange future market is an objective criterion. The lack of two criteria results in a contract of difference to be seen as the wagering contract. Under this legal reasoning, the legal effect of CDS contract is uncertain. From one side, this contract is the over the counter contract rather than the contract in exchange. The performance of CDS contract is not foreseeable whereas the exchange traded derivative contract will be performed at a certain time. From another side, the speculative intention will also be subject to rules of wagering contract, since some party of CDS contract do not hold any interest in the underlying credit contract but buy the CDS to make a profit receiving the

[54] „Ein ernst gemeintes Kassageschäft ist wegen der erforderlichen Inanspruchnahme von Barvermögen oder Kredit eine „faktische Barriere“ für nicht Termingeschäftsfähige, kann so nicht mehr aufrechterhalten werden.“ FHZivR 47 Nr.6437, OLG Hamburg v.17.11.2000 11 U 27/99

[55] § 764 Differenzgeschäft: Dies gilt auch dann, wenn nur die Absicht des einen Teiles auf die Zahlung des Unterschieds gerichtet ist, der andere Teil aber diese Absicht kennt oder kennen muss.

different amount between the premium and the compensation based upon the occurrence of a default event.

b. The wagering contract without legal ground

The German law confirms that wagering contract is void because of the non existence of obligation (§762 BGB), which can also be called a contract without legal ground (causa). Causa is the definition from civil law countries, as above mentioned, no obligation is one types of circumstances without legal ground. However, in some circumstances, the legal ground means not only the obligation itself but also the purpose behind the obligation.[56] Grünter in his article analyze the nature of wagering contract upon §762 based on the failure of purpose (Zweckverfehlung).

Wagering contract based upon this analysis is condemned because at least one party will lose his contract purpose on account of another party as winner achieving that intention.[57] (1) The contract is apparently not an unilateral contract, even though there is only one act such as one party will make payment to another party. The unilateral contract predetermines that which party has the obligation and he accepts the contract and is binded by it. (2) Otherwise, the contract is not like a bilateral contract such as a sale contract which the parties have reciprocal obligations. The cause to make a performance by one party to the bilateral contract is that the other party will assume the corresponding obligation.[58] In a wagering contract, the purpose of both parties is to be the winner with relevant right depends on uncertainty event, however, the speculative purpose can only be realized by the winner. Based upon the contract, the loser will make the payment with failing purpose which is an invalid obligation. This theory just provides a perspective to explain why the contract is void.

[56] Gerhard Dannemann, The German Law of unjustified enrichment and restitution, a comparative introduction, Oxford 2009, page 41

[57] Grünter Reiner, Johann A Schacht, Hamburg: Credit Default Swaps und verbriefte Kreditforderungen in der Finanzmarktkrise- Bemerkungen zum Wesen verbindlicher und unverbindlicher Risikoverträge, WM 2010 Heft 8, S342

[58] BeckOK BGB/Schöne BGB §705 Rn.28

Actually, the void of contract reflects the value judgment by legislators. The law recognizes the wagering contract not as immoral contract, but the aim of law protects the contract parties from the unpredictable or nonexistent aleatoric contract.[59] It tends to focus more on preventing unfairness between parties. According to this logic, the performance of the wagering contract with failing purpose is unjust to the loser. It seems that there is a contradiction between the legislative aim and the legal effects to the parties that the payer is not entitled to the restitution based upon the S2.1.§762.[60] As to this issue, the payer is obliged to the knowledge of the contract without legal ground. The party who voluntarily takes the risk of disadvantages legal consequences gives up the protection under the law. For the same reason, if a difference contract is characterized as a wagering contract, the party who suffered loss can not claim back the money on the ground of the contract void.[61]

II. Derivative contracts as exemptions

With the development of the derivative market, the law has been changed to loose the legal restriction to derivatives contract progressively. In 1993, the exemption of OTC derivatives was adopted by CFTC.[62] However, there is also concern from the traders over some non-exempted agreement that could be seen as future contract and would be subject to the requirements in CEA. [63] Finally, with the success of trade lobby group, the implementation of CFMA 2000(Commodity Futures Modernization Act of 2000) widely amends the CEA and dispels the legal uncertainty of OTC derivatives. The amended CEA rule confirms the legal validity of a board range of transactions in excluded

[59] MüKoBGB/Habersack, 7. Aufl. 2017, BGB § 762 Rn. 3
[60]in Abs.1 §762 "Das auf Grund des Spieles oder der Wette Geleistete kann nicht deshalb zurückgefordert werden, weil eine Verbindlichkeit nicht bestanden hat." However, in Abs.1 § 812 „Wer durch die Leistung eines anderen oder in sonstiger Weise auf dessen Kosten etwas ohne rechtlichen Grund erlangt, ist ihm zur Herausgabe verpflichtet."
[61] 37 g WphG
[62] Exemption for Certain Swap Agreements, 58 Fed. Reg. 5587 (Jan. 22, 1993) (codified at 17 C.F.R.pt.35).

[63] Over the Counter Derivatives Markets and the Commodity Exchange Act, Report of The President's Working Group on Financial Markets, Nov, 1999 https://www.treasury.gov/resource-center/fin-mkts/Documents/otcact.pdf

commodities and exempt commodities[64] between eligible counterparties. The new law simply shielded the most OTC derivatives from the CEA regulation, getting these financial instruments out of the oversight compared to the exchange traded future contract.

In Germany, the adoption of Financial Market Promotion Acts changes many aspects of German securities trading act.[65] § 37 e WpHG excludes the objection that the financial futures transaction can be seen as wagering contract, if one party is enterprise who concludes the contract commercially or on a scale which requires commercially organized business operation or which purchases, sells or brokers these transactions.[66] From the text, the exception is restricted to a corporation and it can conclude the contract on its own account or through the financial service corporation.[67] Therefore, the transaction between private people is still subject to § 762 BGB. Otherwise, the defination of financial future contract is wide, which includes all the derivate prescribed in § 2 Abs.2 WphG and options certificate, and the transactions in the exchange market and the OTC market are all regulated under the securities trading act.[68]

In comparison between the exceptions rules in US and Germany, the eligible counterparties in US includes individuals whose assets over $10,000,000, it means that these principal to principal transactions are totally exception to the CEA regulation and the most OTC derivatives are not affected by the recordkeeping and disclosure rules in CEA.[69] In Germany, the validity of financial futures transactions between individuals will still subject to the § 762 BGB. As to

[64] Section 103,106, 107 of CFMA http://www.cftc.gov/files/ogc/ogchr5660.pdf

[65] Das Vierte Finanzmarktförderungsgesetz ist am 1. Juli 2002 in Kraft getreten.

[66] § 37 e wpHG „Gegen Ansprüche aus Finanztermingeschäften, bei denen mindestens ein Vertragsteil ein Unternehmen ist, das gewerbsmäßig oder in einem Umfang, der einen in kaufmännischer Weise eingerichteten Geschäftsbetrieb erfordert, Finanztermingeschäft abschließt oder deren Abschluss vermittelt oder die Anschaffung, Veräußerung oder Vermittlung von Finanztermingeschäften betreibt, kann der Einwand des §762 des Bürgerlichen Gesetzbuchs nicht erhoben werden."

[67] Assmann/Schneider/Döhmel, 5.Aufl. § 37 e WpHG Rn.5

[68] Fuchs, Wertpapier-handelsgesetz, § 37 e Rn.7

[69] Public Law 106-554,114 Stat.2763 (December 21, 2000); Testimony of Thomas J. Erickson, Commissioner, CFTC before Committee on Agriculture, Nutrition and Forestry, United States Senate July 10 2002 about the Role in Oversight of OTC Derivatives

the OTC derivatives, the enterprises treated as eligible counterparties will exempt from the retail client protection and the investment service enterprises has no obligation to disclose obligations to this type of clients. It means that the parties will assume the business risk themselves if the transaction is not prohibited by law (§31b, §37g WpHG). The effect of this deregulation process protect the derivative market participants who subsequently acquire huge profit from the development of the OTC derivative market. The more and more complicated financial products and the uncontrolled speculative intention eventually bring harm to the financial market.

Section C. The Lehman Brother's collapse due to lack of financial supervision and the role of market infrastructure during crisis.

Lehman Brother is a major derivative participant in the market. Until it was insolvent in 2008, the investment bank was the party to 906000 derivative transactions with a notional value estimated as 35 trillion.[70] Most of these contracts are OTC unregulated derivative contracts. Nevertheless, if the bankruptcy of Lehman brother is a big failure of financial derivative market, it is a big success of risk management role of Central Clearing Counterparty (CCP). In the Lehman's case, the significant role of strong market infrastructure such as CCP is displayed undoubtly.

Except the other large amounts of OTC derivative contracts, the interest rate swap participated by Lehman Brother was managed by LCH. Clearnet and the default exposure of these swaps resolved well less than a week. It is indeed a successful risk management case impressed the market. The Lehman Brothers involved in trades including exchange products, repos, equities and OTC derivatives, which are very complex. When the corporation filed bankruptcy, all the distrustful party wanted to terminate the contract and got their money back; however, the termination of transaction cannot be accomplished rapidly. Each

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[70] Lehman Brothers Holdings Inc. First Creditors Section 341 Meeting, slides 19-20 (Jan. 29, 2009), http://www.lehmanbrothersestate.com/LBH/Pr
Rosalind Z Wiggins, Andrew Metrick, The Lehman Brother's Bankruptcy G: The special case of derivatives, Yale Program on Financial Stability Case Study, 2014-3G-V1, Oct 2014

party has its interest and consideration. If it was a long process, the market uncertainties shrink the trade volume and cause the illiquidity, which harms the financial market severely.

There is still skepticism of the destructive effect of derivative contract to the bankruptcy of Lehman Brothers. Summe holds that 80% of Lehman's derivative contract terminated and the derivative trading part contributed most part of bankruptcy estate of the institution.[71] However, the 28% recovery rate to Lehman's creditor is not a good deal [72] so that the situation is not as positive as said when Lehman Brother terminated the contract or was forced to sold its assets during the stress market time. If the termination of contract bilaterally gives rise to unsatisfied results, what is the difference between the characteristic of LCH's termination of contract and the bilateral termination?

LCH is a major clearinghouse provides central clearing counterparty (CCP) service. Central Clearing is not a recent innovation tool, and it has been existing since the late 19th and used in trading commodity assets.[73] CCP is an entity interposes itself between the two counterparties in a financial transaction. After the parties have agreed to a trade, the CCP becomes the buyer to every seller and the seller to every buyer.[74] In a report published by German Stock Exchange Group and Eurex Clear, three characteristics CCP, the independent risk manager, addressing interconnectedness, and protecting market participants from

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[71] Kimberly Summe, Misconceptions about Lehman Brothers' Bankruptcy and the Role Derivatives Played, 64 Stan.L. Rev. Online 16 2011 Summe in her article argued that derivative does not cause the destruction whereas it boosts the assets to creditors.

[72] Fleming, Michael J. and Sarkar, Asani, The Failure Resolution of Lehman Brothers (December, 2014). Economic Policy Review, Volume 20, No.2, Available at SSRN: https://ssrn.com/abstract=2422433; Based upon the report, the average credit recoveries is 55%, the Lehman case is about 28%

[73] German Exchange and Eurex Clearing report: How central counterparties strengthen the safety and integrity of financial markets. boerse.com/blob/2534542/37fbffb2a577d8e43d52d19223b49c63/data/how-central-counter-parties-strengthen-the-safety-and-integrity-of-financial-markets_de.pdf

[74] Dietrich Domanski, Leonardo Gambacorta, and Cristina Picillo, Central clearing: trends and current issues (6 December 2015), BIS Quarterly Review, p.60 http://www.bis.org/publ/qtrpdf/r_qt1512g.pdf

clearing member defaults are analyzed[75] and showed all the major strategic tools of CCP to prevent the systemic risk.

Firstly, CCP as an independent risk manager will have no motive to take excessive risk. It represents each party to perform the contract obligation rather than take the profit of contract by itself. From this perspective, CCP has no speculative intention and is no preference to engage in CDS contract based upon higher risk referring entity. Otherwise, the reciprocal obligations are guaranteed by collateral. The only exposure of CCP is one party defaults the contract. Conversely, especially in the speculative trade of CDS contract, the naked CDS buyers assess the reference entity will hold higher risk, then they can sell the CDS contract at higher price because more insurance premium will be required concerning risker referencing entity. The increasing premium is corresponding to the decreasing value of referencing entity, since the large amount buyers of CDS reflects the adverse market reaction to that underlying entity.[76] The sellers of CDS are also speculators because they think the default events will not happen as we aforementioned. The deviation between CDS price and the value of underlying assets will cause the consequence: The price amount of all CDS contract in the market will overly exceed the payment ability based upon the reference entity, therefore the CDS seller will take the big loss when the occurrence of CDS default event. Besides, the negative market assessment to the underlying entity will aggravate the risk of that entity since its refinancing cost will increase and the entity's bond price will drop down, which induce more probability of the happening of the default event. In the Lehman Brother case, since Lehman Brother is a very popular referencing entity of CDS contract, Lehman Brother's Bond prices drops severely after bankruptcy filing from around 1 dollar to about 0.13 dollar. The result is that the outstanding notional

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[75] German Exchange and Eurex Clearing report: How central counterparties strengthen the safety and integrity of financial markets

[76] Gerald. P.Dwyer, Financial Speculation in Credit Default Swaps, march 2010, Publication of Federal Reserve Bank of Atlanta (P.Dwyer, 2010)

value of Lehman Brother's CDS contract is 400 billion, and the CDS seller will make a 360 billion payout.[77]

Secondly, CCP could use the novation of contract and multilateral netting to reduce the interconnectedness effect. The definition of "interconnectedness" is a broad definition. Generally it refers to relationships among economic agents that are created through financial transactions and supporting arrangements. The distress of one entity is easy to transmit to another entity.[78] This contagion effect will also trigger the panic of the market, and each institution will distrust the credibility of its counterparty and the in the money parties only want to terminate the contracts which take benefits to them. This panic is the direct reason of the bankruptcy of Lehman Brother. As Janet Yellen remarked, each seeks to maximize profits under the assumption that the network is configured in the worst possible manner from its own perspective.[79] All the parties do not know the notional exposure of Lehman Brothers, each one knows the identities of its own counterparties but not identities of its counterparties' counterparties.[80] The information asymmetry in this interconnected network made the parties liquidate the contracts that they would not do if they had known the aggregate exposure. There are also risk management tools, such as close-out netting and margin requirement, for OTC contracts. However the parties of contracts are scattered, the lengths of the process to liquidate the contract are different, upon which situations the exposure of parties can not be effectively netted and the panic sentiment in the market will not disappear. After the long and chaos process, it was realized that the amount of third –party derivative claims to Lehman Brothers after netting is much smaller than the sum of the notion value the market estimated.[81]

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[77] Hal. A. Scott, Interconnectedness and Contagion- Financial Panics and the crisis of 2008, 2016, MIT Press, p.32, 34 (Scott, 2016)

[78] DTCC report, Understanding interconnectedness risks, Oct 2015

[79] Janet. L. Yellen's speech, Interconnectedness and Systemic Risk: Lessons from the Financial Crisis and Policy Implications, January 4, 2013 http://www.federalreserve.gov/newsevents/speech/yellen20130104a.htm

[80] Janet. L. Yellen, Interconnectedness and Systemic Risk: Lessons from the Financial Crisis and Policy Implications

[81]Hal. A. Scott, Interconnectedness and Contagion- Financial Panics and the crisis of 2008, p. 41

Conversely the LCH as the central clearing counterparty manage the risk more effectively than the bilateral counterparties. First, the CCP is the only counterparty to all the contracts after the novation process. It will assumes all the liability if one of its member default. The in- the –money party can expect that it can get the full payment from CCP. Furthermore, the CCP can make the multilateral netting process and reduce the aggregate exposure of each party. CCP records all the data of its member and set up the accounts so that it can finish the netting process more smoothly. The information transparency of CCP system can overcome the panic sentiment between different parties. In the LCH default management process, the swap clearing banks play an invaluable role in providing trade expertise and access to market liquidity during the default.[82] However, The special trading session for major market participants to net down their Lehman exposure is frustrated ineffective because the institutions cannot determine the whole exposure of Lehman brothers and some parties only want to resolve the contracts they are in the money.[83] These facts improve that CCP can better manage the risk and helps the parties conquer the panic in the market, which is not in existence of the OTC contract circumstances.

The two points above mentioned are that the characteristic of CCP as the contract party is not as that of the trader in the financial market. CCP will not increase excessive risk, and the permission of multilateral netting in the CCP system can mitigate the interconnectedness effect. The last point shows CCP can better protect the non-default party from the loss because it implements the rigid collateral requirements. Margin shall secure all the derivative contracts between a party and the CCP. If there is an exposure to CCP, the default party shall cover the loss by the initial margin and variation margin provided to CCP. The characteristic of initial margin and variation margin will be analyzed in the third chapter. In addition, the party shall contribute to the default fund of CCP, which aims at the extremely movement of the market. According to the LCH's

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[82]LCH news http://www.lch.com:8080/swaps/swapclear_for_clearing_members/managing_the_lehman_brothers_default.asp, Less than one week after the default, the market risk has been reduced by 90% by hedging and was fully resolved within three weeks.

[83] Hal. A. Scott, Interconnectedness and Contagion- Financial Panics and the crisis of 2008, p. 41

opinion, the individual initial margin and variation margin can only cover part of the risk, however, extreme market circumstances may cause an additional amount of margin cost. A guarantee default fund contributed by all the clearing members will reduce the cost of each one and the share taken by each member will be adjusted with the market risks.[84]

Therefore, if the personal margin submitted by clearing member can not mitigate the exposure, the default fund contribution of the defaulting member shall be used. When all these resources are depleted, the CCP will use its funds and the contribution of all the members to manage the risk. The default fund and other pre-funded resources of the CCP are designed to withstand at least the default of the two members in extreme but plausible scenarios.[85] It is obviously that the CCP' s ability in resisting the risk is stronger than the individual default party. Even though there are some criticisms that the methodology used by CCP to calculate the margin and the contribution of funds is obscure and the clearing member must obey it rather than scrutinize it. [86] The risk management of CCP is successful in history. According to LCH's publication, The Lehman Brother case (2008) and MF Global UK Ltd case (2011) are well managed without any chain reaction of other LCH's clearing members or on its cleared market.[87]

Due to the global financial crisis, financial regulators rethink their earlier policy on deregulated derivatives. The revival of a prohibition on speculation is another path to resolve the inherent risk of derivatives. However, this compulsory rule is controversial and some traders claimed that they lost a useful tool to hedge their business risk. In a report from UK Parliament "derivatives have sound economic and commercial benefits, and have been and remain necessary to the development of trade and commerce, but the manner in which they are used can

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[84] LCH, default fund summary, http://www.lch.com/risk-collateral-management/default-fund-summary

[85] See EMIR Article 42 and Article 43 for default coverage requirements

[86] ICMA, CCP Q&A a number of drawbacks to the use of CCP http://www.icmagroup.org/Regulatory-Policy-and-Market-Practice/short-term-markets/Repo-Markets/frequently-asked-questions-on-repo/27-what-does-a-ccp-do-what-are-the-pros-and-cons/

[87] https://www.newyorkfed.org/medialibrary/media/banking/international/11-LCH-Credit-Risk-2015-Lee.pdf

pose a risk to the system."[88] It means that credit derivatives can play a positive role when they are used in transparency and information efficient market. The successful performance clearinghouse in the crisis also indicates that the establishment of market infrastructure is helpful to fulfill financial stability.

Section D. The regulatory response at the post-crisis stage and the establishment of CCP rules

Although there are several paths to prevent risk, the regulators on both sides of Atlantic choose CCP as the solution to the problem of systematic risk inherent in derivatives. The mandatory clearing requirement in Dodd-Frank Act and EMIR will be illustrated in detail in this part. There are many common points in these two legislations.

I. The clearing rules in Dodd Frank Act and in other regulations

The CFTC regulations under section 4s (i) of the Commodity Exchange Act are authorized under the Chapter VII Dodd-Frank Act. The scope of Dodd –Frank Acts is very wide, from the aspects of the supervision of SIFIs (Systemically Important Financial Institutions), the restriction of the activities of financial institutions (Banks, Insurance Company, Credit Rating Agencies, etc.), the regulation of capital markets and financial products, to the consumer and investor protection.[89] This Act is aiming to restructure the financial regulatory system, to prevent Bailouts that impair the benefits of citizens, and to restore the public confidence. In respect of Derivative regulation, it is not necessary to examine article by article here. Two issues are the most important: 1) which trade shall be mandatory cleared and who will decide it. 2) What kind of market participants will subject to the registration and other corresponding requirements.

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[88] UK Parliamentary report: The future regulation of derivative markets: is the EU on the right track? Chapter 2, at para 27
http://www.publications.parliament.uk/pa/ld200910/ldselect/ldeucom/93/9305.htm
[89] e.g. Title I, Title V, Title VII, Title IX Dodd- Frank Act
http://www.cftc.gov/idc/groups/public/@swaps/documents/file/hr4173_enrolledbill.pdf

Before the overview of the derivative regulations based upon Title VII, the division of regulatory powers between CFTC (Commodity Futures Trading Commission) and SEC (Securities Exchange Commission) will be introduced. Title VII grants CFTC the authority over swaps, except for security-based swaps, which are regulated by SEC.[90] For a long time, these two organizations were competing to expand its regulatory power. Now they should coordinate future-swap related regulation consistency across both organizations.[91] However the definition of "swap" and "security-based swap" shall be further explained. The final explanation prescribed by CFTC shows that the definition of swap is broad and explains the exemptions of the swap.[92] The exempted contracts in the explanation will not subject to the Title VII and other regulations authorized by this title.

1.Contracts are not swaps or security-based swap

These contracts include insurance contract, consumer and commercial transactions, loan participations, and forward exclusion from the swap definition for non-financial commodities. [93] It means that these contracts will also not subject to the mandatory clearing rule, and the characteristic of these contract is lack of the speculative intention which causes the abusive use of derivative contracts. The exemptions are plausible: As to the insurance contract, the contract requires the beneficiary must have an insurable interest, and the contract must not be traded separately from the insured interest on an organized market or OTC.[94] The consumer transactions entered by natural person or its agent are usually for the personal, family or household purpose; The commercial transactions that are customary business arrangements such as purchase and

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[90] Dodd-Frank: Title VII- Wall Street Transparency and Accountability, Introduction.

[91] Dodd-Frank: Title VII- Wall Street Transparency and Accountability, Introduction.

[92] 7 U.S. Code §1a (47)

[93]Part II. Section B. 1, 2, 3; 77 Fed.Reg. 48207, Further definition of "swap", "security-based swap", and "security-based swap agreement"; mixed swaps; security based swap agreement recordkeeping (Aug. 13, 2012) https://www.gpo.gov/fdsys/pkg/FR-2012-08-13/pdf/2012-18003.pdf

[94] Further definition of "swap", "security-based swap", and "security-based swap agreement"; mixed swaps; security based swap agreement recordkeeping, p. 48212

sale contract, and fixed or variable interest rate commercial loan contract will not be considered as "swap" or "security based swap contract". The exemption of loan participation from the swap based upon the reason that the transfer of loan is not on a leverage base.[95] The last exemption is forward contract settled by commodities. The CFTC explanation clarifies that CFTC's historical "Brent interpretation" will apply to the forward exclusion under swap regulation.[96] The Brent regulation prohibits the use of payment of different basis as the delivery of contract, and either party to the initial agreement is entitled to require the other party to make or accept physical delivery to meet the obligation. A contract that complies with this explanation is a typical hedge contract, and this contract is more like a sale contract that has a small effect on the market.

Except these exemptions, The Foreign Exchange Forwards and Swaps, Foreign Currency Options, Non-Deliverable Forwards in Foreign Exchange, Currency Swaps and Cross-Currency Swaps are within the scope of the definition of "swap" under CFTC final rule. The difference between "swap" and "security-based swap" is that the security-based swap is relies on "yields" which is a proxy for the price or value of a debt security, loan or narrow-based security index.[97] The product of index CDS could be a "security-based swap", or a "mixed swap" so that the CDS is on broad –based security index. The above –mentioned swaps and security based swap shall be submitted to a derivative clearing organization in principle.[98] However, CFTC or SEC as the authority has the right to decide whether these swaps are subject to the clearing requirement. A derivative clearing organization is required to submit all swaps that accepted to clear to

[95] A comment from Loan Market Association to SEC about the definition of "swaps", "Security-Based Swap" https://www.sec.gov/comments/s7-16-11/s71611-17.pdf

[96] Fact sheet Final Rules and Interpretations i) Further definition of "swap", "security-based swap", and "security-based swap agreement"; ii) Regarding "mixed swaps"; and iii) Governing Books and Records for " Security-Based Swap Agreements" http://www.cftc.gov/idc/groups/public/@newsroom/documents/file/fd_factsheet_final.pdf

[97] CFTC Glossary: a narrow-based security index as an index of securities that meets one of the following four requirements (1) it has nine or fewer components; (2) one component comprises more than 30 percent of the index weighting; (3) the five highest weighted components comprise more than 60 percent of the index weighting, or (4) the lowest weighted components comprising in the aggregate 25 percent of the index's weighting have an aggregate dollar value of average daily volume over a six-month period of less than $50 million ($30 million if there are at least 15 component securities) https://www.cftc.gov/ConsumerProtection/EducationCenter/CFTCGlossary/glossary_n.html

[98] Sec 723 (3) Dodd-Frank Act

the CFTC.[99] Therefore, there is still some uncertainty of which contract will subject to the clearing requirement.

2. The market participants of swap

The mandatory clearing requirement will apply based upon the classification of swaps and the scrutinization of the relevant authority. There are also limitations to participate in the swap trade, and additional requirements are added to the market participants. First, there is a bottom line rule "It shall be unlawful any person, other than the eligible contract participant, to enter into a swap unless the swap is entered into on, or subject to the rules of, a board of trade designated as contract under section 5."[100] The eligible counterparties could be financial institution, insurance company or commodity pools [101] and other entities or an individual who has amounts invested on a discretionary basis, the aggregate of which is in excess of 10,000,000 or 5,000,000 in order to manage the risk associated with the assets owned or liability incurred, or reasonably likely to be owned or incurred, by the individual.[102] The retail customers are not ECPs. This requirement mainly considers that non-ECP has neither professional skill nor capital capacity to enter into this market.

Second, there are exemptions from mandatory clearing requirement for certain counterparties such as „commercial end user". These users can not be a financial entity and will use swaps to hedge and mitigate their risks. In addition, they have to notify the Commission that they meet the financial obligation associated with entering into non-cleared swaps.[103] Even though these users are not financial institutions, they could be ECPs. Therefore, some ECPs could apply the end-user rule to exempt from clearing requirement if the contracts they engaged in are categorized to be cleared.

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[99] Sec 723 (a) (3) Dodd-Frank Act
[100] Section 723 (a) (2) Dodd-Frank Act; Section 2 (e) CEA (Commodity Exchange Act)
[101] CFTC Glossary
[102] Commodity Exchange Act 1(a) 18
[103] Commodity Exchange Act 2(h)(7)

The last point is that the additional requirements will apply to two new categories of market participants: "swap dealer", and "major swap participants" (corresponding "security-based swap dealer" and "major security based swap dealer"). It means that these two types of market participants will take more burden than others because the requirement is broad which includes disclosure of information to the CFTC, providing full and complete transaction and position information of all swap activities, keeping business records and margin requirements.[104] The character of the "swap dealer" is that it "makes a market in swap" and "enters into swap as its ordinary business".[105] The typical dealer is the investment bank. The "major swap participants" is not the dealer but a person that maintains a "substantial position" in any of the major swap categories, including hedging transactions, or whose outstanding swap create substantial counterparty exposure that could have serious adverse effect to the financial market. It can also be any "financial entity" that is highly leveraged relative to the amount of capital such entity holds and that is not subject to capital requirements established by an appropriate Federal Banking agency and that maintains a "substantial position" in any of the major swap categories.[106] The term "substantial position" in the first test is measured based upon a party's uncollateralized and netting exposure.[107] Except the first test, there is an another test of "substantial position" accepted by committee that the party's exposure includes current uncollateralized and the potential future exposure associated with a person's swap position.[108] The amount of second test's exposure (2billion) is more than that of the first test (1 billion) except that the threshold would be 6 billion.[109] From the explanation of "Financial Entity" participants, it could be concluded that the rule aims to regulate big swap traders such as hedge fund, SPV and other shadow bank entities. Based on the analysis of Dodd-Frank Act Title VII and other regulatory rules, except some products and certain

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[104] Commodity Exchange Act 4 (s) (a), (b)
[105] CFTC final rules regarding further defining "swap dealer", "major swap participants", and "eligible contract participants"
http://www.cftc.gov/idc/groups/public/@newsroom/documents/file/msp_ecp_factsheet_final.pdf
[106] Sec 721 Dodd-Frank Act, subsection 33 definition of "major swap participants."
[107] CFTC final rules regarding further defining "swap dealer", "major swap participants", and "eligible contract participants"
[108] *Id.*
[109] *Id.* "test for substantial position"

participants, the mandatory clearing rules covers the majority products and market participants, and the CFTC or SEC has the right to decide which product should be cleared.

II. The mandatory clearing rules in EMIR

The corresponding mandatory clearing regulations of OTC derivative market are prescribed in EMIR (European Market Infrastructure Regulation). Based upon the spirit in G-20 summit in Pittsburgh, the aim of the rule is to improve transparency in derivative markets, to mitigate counterparty risk and systemic risk and protect against market abuse.[110] The law also refers to two important issue that which class of OTC derivatives is subject to central clearing obligation and who will subject to that obligation.

1.The classes of OTC derivative subject to central clearing obligation

It is definitely that not all the OTC contracts are suitable to the central clearing requirement. In the EU legislation system, The EC Committee is delegated to adopt the regulatory technical standards submitted by ESMA to decide the classes of derivatives that shall be cleared. EMIR implements two approach making process: (1) The "bottom up" approach is the process prescribed in EMIR Art 5(2). ESMA will draft RTS and submit it to the commission based on the premise that a competent authority authorizes a CCP to clear a class of OTC derivatives.[111] (2) The "top-down" approach is prescribed in EMIR Art 5(3), based upon which ESMA will identify which class shall be cleared on its own initiative and no CCP has yet received authorization to clear the class of derivative.[112] As to the definition of "derivative" and "derivative contract", which means the financial instrument as set out in Section C (4)-(10) Annex I of MifiD (2004/39/EC)[113], this definition includes basically all the financial instrument in

[110]Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories (EMIR), Recital (8) (9)
[111] EMIR Art 5(2)
[112] EMIR Art 5(3)
[113] EMIR Recital (5)

the market. It shall be noticed that there is no exemption of derivative contract such as that in US legislation. The derivative in EU legislation includes all the options, futures, swaps, forwards rate agreements that may be settled physically or in cash.[114]

2.The market participants subject to central clearing obligation

Two categories of counterparties are subject to the clearing obligation, one is financial counterparties such as banks, asset managers, insurance company; another is non-financial counterparties (NFCs) which include any EU firms whose position in OTC derivative contracts exceeds the EMIR clearing threshold.[115] For the non-financial counterparties, the threshold requirement and the end-user exemption are very important tools for them to avoid the regulatory requirement. As to the threshold requirement, the calculation of position based on a gross notional value will exclude hedge derivative and is divided by class.[116] In addition, the position will include all derivative contracts entered into by the NFC and by other NFCs who are in the same group with the NFC.[117] It could be anticipated that many firms will not reach the standard of "clearing threshold" because of the aggregate size of their OTC derivatives contracts. These companies could be seen as end-users and are exempted from the clearing requirements. Although there is no clear end-suer exemption rule in the EMIR, the EMIR clearing rule may give wider exemption than Dodd-Frank Act due to the high clearing threshold.

One exemption to the market participants in EMIR is the intra-group transaction. The definition of "group" can be found in the Art (2) of EMIR and other relevant regulations. This exemption takes the reality of EU into account---- The EU banking groups acts in several different countries and sometimes their clients are favorably governed by the local law. The local institution will conclude a

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[114] Annex I Section C, Directive 2004/39/EC
[115] EMIR Art 2(9)
[116] EMIR Art 10 (3); Credit: Eur 1 billion; Equity: Eur 1 billion; Interest rates: Eur 3 billion; Foreign Exchange: Eur 3 billion; Commodities and others: Eur 3 billion
[117] EMIR Art 10 (3) EMIR

contract with a client and make a Back-to-Back contract with other institutions in the same group within the EEA regime.[118] Compared to EU parties, the US market participants have less demand of intra-group transaction.

III. The conflicts and extraterritorial issues in clearing rules

From the analysis of US and EU rules, it could be seen the differences regarding the types of cleared derivatives, the scope of regulated participants, and the affiliates exemption. A plenty of new regulations will cause the worries of market participants to consider whether they will subject to the new rigid compliance requirements and adjust their portfolio or business strategies. Otherwise, the new regulations will conflict with each other within different jurisdictions, and trigger different results when the local laws react to the new financial regulations. The expansive application of one country's rule into another country's jurisdiction will increase market fragmentation, and the reconciliation shall be reached between jurisdictions where the majority derivatives contracts concluded in the global financial market.

From the texts of Dodd-Frank Act and EMIR, both transatlantic regulatory regimes refer to an extraterritorial issue. Section 722 of the Dodd-Frank Act defines the territorial application of the rule and it is clear that this rule will apply to the US-person and non-US person[119] and the CFTC explains the "non-US person" in a broad meaning. [120] In Article (4) EMIR, the rule will also apply to the financial counterparties and non-financial counterparties established in EU, or at least one entity established in the EU, or two entities established in the third

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[118] ISDA/AFME briefing: Why EMIR must apply a proportionate, internationally coherent approach to regulation of intra group transactions (10 May 2011) https://www.isda.org/a/FQEDE/11-isda-afme-case-for-proportionate-treatment-of-intragrp-transactions.pdf

[119] Section 722 Dodd-Frank Act "The provision shall not apply to activities outside US unless those activities have a direct and significant connection with activities in, or effect on, commerce of the United States"

[120] CFTC, Interpretive Guidance and Policy Statement Regarding Compliance with Certain Swap Regulations, factors concerning the consideration of whether a non-U.S. person is an" affiliate conduit" http://www.cftc.gov/idc/groups/public/@newsroom/documents/file/crossborder_factsheet_final.pdf

countries but they are EU entities, provided a direct, substantial and foreseeable effect in the Union can be proved.[121] The US and EU both have legitimate interests to seek jurisdictions over the activities and the market participants and require them to comply with the requirements.[122] A solution to the extraterritorial is the using of "substituted compliance" which means that the regulatory compliance can be waived based on a substantially similar regime in the entity's home jurisdiction.[123] Therefore, this case is not about that one jurisdiction (e.g.US) shall permit the derivative or the entity exempted from the clearing requirement in another jurisdiction (e.g. EU), but about whether EU has a similar robust market infrastructure (like CCP) as that in the US to clear the derivative.[124] ESMA or CFTC has the right to waive the regulatory requirement of participants if they comply with its local regulation. It will reduce the cost expended for them if they do not need to take the dual responsibility. Otherwise, the regulatory arbitrage shall be prevented during the process of "substituted compliance". As we have mentioned, the clearing obligation shall not be waived, but in reality, certain EU rules are stricter in some area, and certain US rules are stricter in others.[125] If some derivatives shall be cleared subject to the rule of one jurisdiction but will be exempted from the obligation in another jurisdiction, the more rigid rule shall apply here, which means that the derivative shall be cleared in this circumstance.[126]

From this part, it could be concluded that the clearing rules in both US and EU satisfied the minimum requirement reflected in G-20 Committee. The clearing

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[121] ESMA 2013 1657-Final Report on EMIR application to third country entities and non-evasion https://www.esma.europa.eu/sites/default/files/library/2015/11/2013-1657_final_report_on_emir_application_to_third_country_entities_and_non-evasion.pdf

[122] CFTC and European Commission, Cross-Border Regulation of Swaps/Derivatives Discussions between the Commodity Futures Trading Commission and the European Union- A Path Forward, July 11, 2013 http://www.cftc.gov/idc/groups/public/@newsroom/documents/file/jointdiscussionscftc_europeanu.pdf

[123] CFTC and European Commission, Cross-Border Regulation of Swaps/Derivatives Discussions between the Commodity Futures Trading Commission and the European Union- A Path Forward

[124] Sean J. Griffith, Substituted Compliance and Systemic Risk: How to make a global market in Derivatives Regulation, 98 Minn. L. Rev. 1291 (2014)

[125] CFTC and European Commission, Cross-Border Regulation of Swaps/Derivatives Discussions between the Commodity Futures Trading Commission and the European Union- A Path Forward

[126] Sean J. Griffith, Substituted Compliance and Systemic Risk: How to make a global market in Derivatives Regulation, p. 1340

requirements are approximately "equivalent" to each other; however, the existence of conflicts is inevitable. The total unification is not an absolutely right choice because the local legislation enacts rules to reflect the specializations of the local trading following the international legal principles. The collaboration and showing deference to the "equivalent or similar" law in another jurisdiction is a better way to promote the regulatory efficiency.

E. Summary

This chapter initially illustrates that the overuse of OTC derivatives, especially credit derivatives, is one important cause of the financial systemic risk. Except for the innovation of financial instruments, the deregulation of OTC derivatives results in these contracts are outside of the oversight of regulators, stimulating the excessive risk-taking and information asymmetry between different financial institutions. The third part of the chapter, using LCH's performance in dealing with Lehman Brother's defaulted contracts, analyzes essential functions of the Central Clearing Counterparty which take the vital role to manage the risk successfully. The reason for this success is that CCP as a financial market infrastructure does not benefit from the excessive risk-taking; besides, the contract novation and risk allocation mechanism functions of CCP will address the information asymmetry and protect the counterparty efficiently. The last part is a general analysis of the Dodd-Frank Act and EMIR as the prime financial regulation governing the CCP clearing. The most OTC derivatives between professional counterparties will be subject to the regulation, and the substituted compliance is the way to promote the cooperation between regulators both sides of Atlantic.

Chapter 2. The legal construction of the Central Clearing Counterparty at over the counter market

As aforementioned, CCPs are financial market infrastructures that can prevent counterparty risk, which induces systematic risk in the whole financial system. The prevention of the counterparty risk could be achieved by two steps, one is the novation of party and the other is novation multilateral netting.

The first step provides legal support to the second step, because CCP is the counterparty of all clearing contracts and the mutuality of contract (Gegenseitigkeit) is one precondition to guarantee multilateral netting that goes on smoothly. A concerned legal risk in multilateral netting is whether the netting process of CCP could be exempted from automatic stay after the commencement of insolvency process. In order to eliminate this uncertainty, many countries have enacted safe harbour rules to support that non-default party of financial contracts can terminate the contract and liquidate the defaulting counterparty's asset. An explicit explanation of the legal nature of CCP can help to understand the mechanisim of multilateral netting and the present conflict of law in this aspect.

Section A. Substitution of Parties: Open offers and Novation

I. Open offer model of Exchange traded Derivatives.

1. The conclusion of contract between clearing member and CCP in exchange market

Open offer models are widely used by main clearinghouses to clear Exchange Traded Derivatives[127]. This model means that the two counterparties (seller and buyers) **never reach** a bilateral agreement because the CCP steps in at the point in time when matching occurs[128]. This explanation recognizes that CCP is the party of contract from beginning to end. Generally, the process of offer and acceptance is essential to the conclusion of contract, however, the question is which party is an offerer or an acceptor. Even though CCP is the counterparty of all clearing contracts, it should depends on the clearing members whose orders are matched, and the system can not send the offer by itself. Otherwise, the right

[127] Eurex, Reporting by Eurex Clearing according to EMIR Article 9, page 7.
[128] Eurex clearing response to ESMA discussion paper on Draft Technical Standards for the Regulation on improving securities settlement in the European Union and CSD, page, 6.

of rejection is not in the hand of CCP if clearing members are acceptors. Therefore, CCP could only be the acceptor in the process of constituting contract.

The scholars from America and Canada assume that open offer is an offer "open" to the clearing members of the CCP to accept by conduct. [129]According to the analysis above, the act of CCP is not *offerta ad incertas personas* that relies on the acceptance of clearing member to conclude the contract. Scholars in Germany assert that a model named anticipation acceptation (Antizipierte Annahme) better explains the act of CCP as a counterparty[130]. In this situation, clearinghouse committed to provide central counterparty service to clearing member who signed the clearing agreement with it. It means that the CCP will accept one order or quote entered into the trading systems of a market by a clearing member, if the order is matched with another order or quote.[131] This promise is an *invitatio ad offenrendum* and it is effective to all clearing members. In addition, the promise which is made prior to the conclusion of contract is lack of essentialia negotii such as price, amount, or certain counterparty. Therefore, this anticipated acceptance is not a legally binding act.

The order submitted by clearing member is functioned as an offer for concluding the contract. The certainty of parties of contract is not an issue here, because all clearing members know CCP is always the counterparty of them; CCP can also identify all counterparties because every order has its own series identification number. [132] Otherwise, the amounts of transactions in the contract are certained in the order. But prices in order are sometimes uncertain.[133]

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[129] Christian Chamorro-Courtland, Counterparty substitution in Central counterparty system, Banking and Finance Law Review, June 2011, Page 89
[130] Peter von Hall, Insolvenzverrechnung in bilateralen Clearingsystemen, Page79, Para 2; Stefan Jobst, Böslicher und Außerböslicher Derivatehandel mittels zentrale Gegenpartei, Page 16, para 3.
[131] Art 1.2.2 (1) (b), Chapter I Part1, Clearing Conditions for Eurex Clearing AG (2015)
[132] Jobst, zentrale Gegenpartei, page 19, para 2.
[133] Three types of orders are listed on Eurex website, they are Market orders, Stop orders and limited orders. Markets orders have no specific price limit; stop orders can create market order when the specific trigger price is reached. In this case there is no fix price in the offer, http://www.eurexchange.com/exchange-en/trading/market-model/order-types

After the submission of order by clearing member, CCP will accept the order according to matching principle. Matching is given different definition such as the will to conclude the contract by CCP or the time to conclude the contract. Whereas the most important function of matching is to determine the price. Most products at Exchange follow the matching principle known as price/time priority. An order is immediately executable in three situations: the existence of an opposite order in the central book, an order to buy at a price at or above the lowest offer, or an order to sell at a price at or below the highest bid in the book.[134] Even though there is no fix price in the offer, the offer can be anticipated accepted, if there are appropriate processes to determine the price. Once two orders were matched, the price of the clearing contract was fixed, giving rise to two contracts: one is between selling clearing member and CCP, the other is between CCP and buying clearing member. [135]

One thing to note here is that the acceptance of CCP through matching concludes the contract that is subject to a condition subsequent. The rejection by CCP of the clearing contract will result in the cancellation of contract. In the General terms and conditions of exchange business (AGB), the CCP reserved the unilateral right to reject. Clearing members who signed the contract are agreed to all articles. However, the rejection has legally binding effect only through notice that was sent by the CCP and concerned by the clearing member.[136] The legal consequence of rejection is that no contract has ever concluded between the parties involved. [137]

2. The contract relationship between CM and Client and its effect on CCP clearing

[134] Eurex, Matching principle, http://www.eurexchange.com/exchange-en/trading/market-model/matching-principles

[135] Art 5.4, Exchange Specific GTCB SIX Swiss Exchange, Nov, 2009, http://www.six-swiss-exchange.com/shared/download/regulation/archive/participants/until_2010_03_31/gc_sse_en.pdf

[136] *id,* Art. 5.5

[137] *id,* Art. 5.5

Clearing members clear both its proprietary business and its agent business through CCP. If a CM is delegated to clear contract for its client, the contract relationship between clearing member and its client is another issue in CCP clearing. Two indirect clearing models are used to support client clearing. [138]One is the agency model and another is principal model. Theoretically, there is only one contract relationship under agency model. The clearing member in US is called as FCM who acts as agent of the client so that the client and CCP shall be principals of the contract. According to principal model, it is CM but not the client as the principal of the contract cleared through CCP. However, in practice The CCP has no legal relationship with non-clearing member (NCM).

It is a confusing issue that CCP and clients are principals of contract in name under the agency model, whereas CCP has only claims against CM who is principal in fact and who makes the clearing agreement with CCP. Under the agency principle upon common law, the internal agency relationship is established between principal and agent, and agent concludes contract with a third party in its own name. [139] Therefore, the internal agency relationship does not affect agent's capability to be a principal in a contract with the third party.

Whether the third party knows the agency relationship or not will divide the type of agent into disclosed agent and undisclosed agent. A disclosed agent is not liable to the contract that it concluded with the third party.[140] In the case of clearing, CCP will become the counterparty of sell-side or buy-side CM, if CM is an agent of client, CCP will not know the identity of client, because the trade data of client will not be transferred to the CCP systems. However, it does not mean that CCP does not know CM as an agent for client; it means that the CCP only does not know the identity of client. This relationship is very similar to the broker –customer relationship. The unidentifiable principal is different from undisclosed principal and it is called partially disclosed principal. Under the

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[138] Comments by the International Swaps and Derivatives Association on the consultation paper on proposed Amendments to SGX-DC clearing rules, page 2, Art 2.2.2

[139] American Restatement of law 2d, Agency § 8A, Inherent Agency power, und Reporter's note, para 1.

[140] Rest 2d Agency, §320 Principal disclosed.

assumption of this concept[141] and the disputable judgment of Cooke & Sons v. Eshelby[142], The CCP has a dangerous that could not claim set off against CM because it knows the existence of an unidentified client.

The deficiency mentioned in the analysis above could be excluded by the contract. Under the rule in the American restatement third edition of Agency, a third party could exclude its liability to any undisclosed agency or disclosed agency by expressed term in the contract. [143]Mere designating an agent as a party of the contract can not exclude the liability of third party to the principal. Even though the clearinghouses in America admit the direct relationship between client and clearinghouse, the CFTC Rule 1603 and clearing rules of different CCP prescribe that CCP has contract rights against CM without any influence.[144] As a result, whether CCP know or should know that it was dealing with a principal is irrelevant to CCP's contract right against CM.

In the principal clearing model, the clearing member is deemed as the true principal of the contract concluded with CCP. The clearing conditions regulate the contract relationship between CM and CCP. When the contract was concluded by CM and CCP, a back-to back contract between CM and client is generated. The terms of contract between CM and CCP will be reflected by the subcontract between CM and client. If the main contract terminated, the subcontract will at the same time terminated. Otherwise, CCP will exclude the right of client against CCP through its clearing rules incorporated in the contract. In this case, client protection is more reliable on the segregation and transportation services provided by CCP.

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[141]Rest 2d Agency, § 147, Inference that Principal is a party.
[142] Cooke& Sons v. Eshelby (1887) 12 App Cas 271, In this case a broker sells cotton in his own name for an undisclosed principal, and the principal sues the buyer for the price, the buyer can not set-off a debt due from agent because the agent in this case is not recognized as the principal of contract.; Some thoughts on Undisclosed Agency, Thomas Krebs, 'Some Thoughts on Undisclosed Agency', in Gullifer, L and Vogenauer, S, English and European Perspectives on Contract and Commercial Law, Essays in Honour of Hugh Beale, Hart Publishing 2014,Page 174, para 4.
[143] Rest 3d Agency § 6.03 and comment d, circumstances that affect rights and liabilities of undisclosed principal.
[144] CFTC, FCM clearing rules 1603 (d), FCM contracts

This analysis based on legal principle rationally explained that CCP can use the contract arrangement to assert its rights against CM; even CM is an agent and precludes the rights of client because it is not a principal. In practice, this arrangement ensures that the payment ability of CCP will not be affected by default of client or the clearing member. Certainly the key point to secure the timely payment of CCP and the margin provided by clients depends on the robustness of segregation and portability arrangements.

II. Novation model of over the counter derivatives

Before the financial regulation was promulgated that all the standardized OTC derivatives shall be cleared by CCP, the parties of OTC derivative contract can also voluntarily clear their transaction by CCP. The practical result of clearing under open offer model or novation model is same---although through different process, there is contract relationship only between CMs and CCP. The difference between novation model and open offer model is that there is an existed contract in the over the counter market between parties.

The clearing of OTC market derivatives shall be better achieved by way of novation. In exchange system, the trade mechanism of exchange trade derivatives is centralized exchange and centralized clearing based on matching principle. According to this process, trading parties are anonymous in an exchange and ETD contracts are open contracts in the market, while many OTC contracts are customized for the specific business requirement of customers. The parties[145] shall bilaterally agree to the contract under master agreement and electronic trading systems usually do not apply to OTC derivative contracts.[146] Since the definition of novation is built upon the privately negotiable promise by

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[145] The parties in OTC contract normally are clients and executive brokers. Most brokers are financial institutions. In order to distinguish the OTC derivative transaction from proprietary business, these financial institutions conclude an agent contract with clients. Actually the legal relationship between "broker"and clients are transaction relationship rather than agent relationship. Under the master agreement, there are several single mutual transactions between brokers and clients. The agent will violate the fiduciary duty if it makes proprietary business with client.

[146] 58 Fed.Reg.5587, Exemption for Certain Swap Agreements, at 5591 (Jan.22, 1993)

participated parties, novation is legal basis to transfer rights and obligations from original parties to new parties.

The original contract will be novated by the contract relationship between CM and CCP. Novation has a two tier legal meaning: one is that the substitution of party and the substitution shall be agreed by all relevant parties, the other is that the legal rights and duties of the original contract are relieved and a new legal relationship are created by the new contract. In some opinions the original contract was assigned to CCP and CCP will assume the liabilities of CM. But assignment and novation has different legal effects. Since the ISDA master agreement is normally used by clients to trade OTC derivatives and the agreement is governed by New York law or English law, the explanation of the difference between assignment and novation is under common law.

According to the ISDA user's guide to novation definitions, the term of "assignment" in US is used to summarize the assignment of right and assumption of obligations. Under English law, only rights could be assigned without the consent of obligator counterparty and there is no corresponding definition of an assignment and assumption agreement in English law.[147] From this point of view, novation is only a better explanation in order to mitigate the difference between English law and American Law.

The basic difference of these two concepts is that there is no creation of new legal relationship if the contract was assigned. The assignee is responsible to the duty of contract, which was originally assumed by the obligor assignor.[148] Upon this condition, the original obligor was substituted by the new one, but the original legal relationship was not extinguished.

The legal consequences based on the assignment theory have disadvantages of assuming liability by CCP. If a client, a counterparty of original contract, has a

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[147] User's Guide to the 2004 ISDA Novation Definitions, question 2, page 2, www.isda.org
[148] Rest 2d Contr, §328, Interpretation of Words of Assignment, comment a.

contract defense against CM who is the "agent" of that client, CCP as the new obligor will subject to defense claimed by either party based on the original contract relationship. The payment capacity of CCP will be severely impaired, [149]even so in practice CCP will use the margin provided by clearing members to net the contract.

The specific process of CCP novation is as follows: First, if the party who enters into an uncleared derivative contract needs to clear the contract by CCP, this party shall make an executive agreement with Executing broker (sometimes who is also a CM), In this contract, both parties admit to submit all trade data to CCP and each party appoints their clearing members. Due to the need of consent from all participated parties, CM shall admit to be one party[150] then take the client's position of the new contract. The acceptance is automatically if CM are also executive brokers (such as EUREX) or acceptance must be confirmed by parties to the transaction. (such as ICE). CCP will accept to be another party of the contract and take the executive broker's position only if its counterparty is CM, (1.23. (1) 2 Eurex clearing rule). The novation has legal effect when the OTC novation report was available to the clearing member electronically via Eurex's system. (1.2.2 Eurex rule).

However, if CCP does not accept to clear the trade submitted by original parties, will the bilateral contract relationship between original parties be restored? In accordance with the definition of novation, the original contract shall not be automatically novated back after the rejection of clearing, while The CCP clearing conditions will not regulate the relationship between CM and its client. Therefore, the restoration of original contract was left to the relevant parties who made bilateral agreement referred to this issue.[151] Some considerations are concerned that clearing members may abuse this discretion to convert a

[149] However, Under the Novation model (Eurex), Chapter VIII Part 1, 1.2.1 (6), page 417 „ If a CM-RC transaction.....is not valid or not enforceable vis-a-vis the respective Registerd Customer or other customers, this shall not affect the validility and enforceablity of the CCP transaction between Eurex Clearing AG and the relevant clearing member.

[150] Deutsche Clearing Rahmenvertrag 1. (6), The bank shall be entitled to reject the execution of Transactions. https://bankenverband.de/service/rahmenvertraege-fuer-finanzgeschaefte/clearing-rahmenvereinbarung/

[151] Eurex clearing conditions, Chapter VIII Part 1, 1.2.3 Novation Criteria (2)

standardized derivative contract which should be cleared through CCP to a bilateral derivative contract. [152]

III The futurization of OTC swaps

Tradionally, the clearing contract is novated from the original over the counter derivative contract. This type of transaction is bilateral trade but can be centralized cleared. After the promulgation of Dodd- Frank's Act in 2008, a new trend known as swap futurization in US attracts attentions from market participants and regulators. This trend is that, in order to facilitate the pre-trade transparency in the swap market, swap transactions subject to the clearing agreement must be executed on designated contract market (DCM such as exchange) or on swap execution facility (SEF). [153] The new act defines SEF as a „facility trading system or platform in which multiple participants have the ability to execute or trade swaps by accepting bids and offers made by other participants that are open to multiple participants in the facility or system, through any means of interstate commerce"[154]. However, if derivatives (swaps) are executed on SEF, is there any difference between ETD trade market and OTC derivatives trade market?

Actually the function of SEFs is much similar like that of Exchanges. SEF is now a self –regulation organization and must comply with the core principles enacted by CFTC.[155] In the SEF, a transaction that is not block trade shall be executed through order book or RQF systems.[156] These methods provide a many to many transactions, which means that a SEF permit more than one bidder to evaluate the swap terms from more than one offerer.[157]

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[152] Christian Chamorro-Courtland, 26 B.F.L.R. 517, at 535
[153] CFTC Final rulemaking, Process for a designated Contract Market or Swap Excution Facility to make a swap available to trade under Section 2 (h) (8)of the CEA.
[154] CEA section 1a (50), as amended by section 721 of the Dodd-Frank Act; USC.1a (50)
[155] CFTC Core principles and other requirements for swap execution facilities, Principle 2
[156] Chicago Mercantile Exchange, SEF rules, Art 521 C. page 37
[157] FS Regulatory brief Derivatives: SEFS- Opening bell sounds, june 2013, pwc. com

In reality, even though the ETD products and OTC products are all used to avoid the economic risk of contract parties, the market character and market participants in these two markets are very different. First, in the future contract market, many transactions with small amount were taken place every day, whereas in the over the counter market, fewer and larger transactions were dealt with between limited participants. [158] In addition, many swaps are relevant to the business strategy of market participants who want to privately negotiate the price, avoiding information leakage and adverse price. [159]

As a result of the adoption of block trade exemption[160] in the public rule hearing held by CFTC, SEFs is not a one size fit all market facility as exchanges. Block trade dealers could negotiate price and size of the transactions based upon fair and reasonable principle[161] and this trade could be negotiated through any means of interstate commerce. These means include voice, electronic, and hybrid method. [162]Even though block trades make up 5%-6% in notional amount for IRS and CDS, they are the largest trade in OTC market. [163]From this point, SEF is more flexible to meet the demand of dealers than exchange, because exchange trade derivatives are mainly traded on organized platform.

As shown above, there still exist exceptions after the trade requirements were set up by CFTC, because future market regulations can not totally apply to the OTC market. Centralized trade as a main process to form the price can enhance the liquidity and protect small investors. Conversely, the public dissemination of information will have negative effect on the price of contract and impair the institutional investor's benefit. Due to the large notional value of swap contract, many trades are still privately negotiable but execute on the SEF, satisfying the

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[158] Futures/Derivatives/Swaps/Commodities, 34 No.4 Banking and Fin.Services Pol'y Rep.31, April 2015, page 33.

[159] CGTS represented several banks make a response letter to SEC File No. S7-06-11 and CFTC RIN 3038-AD18; SEC official website.

[160] Chicago Mercantile Exchange, SEF rules, Art 521 A. page 38

[161] ICE swap trade, Block trade- FAQs, www.ice.com ,page 3

[162] CME SEF rules, Art 523"CME SEF may provide various execution methods for permitted transactions." Page 37

[163] ISDA, Block trade reporting for over- the- counter derivative markets, January 18, 2011, Art 1.4, Page 6

needs of investors and avoiding price manipulation activities such as front-running.

The SEF executed swap contracts are subject to CCP clearing requirement in accordance with the clearing service arrangement between CME SEF and clearinghouse. [164]The main clearinghouses also provide CCP clearing service (such as Clearport in CME) for off-book trade such as block trades. Even through more and more standardrized OTC contracts shall be cleared like future contracts, there are some private negotiated derivative contracts which maintains the trade flexibility and use CCP to prevent the credit risks. If there still exist bilateral market for derivative contracts, the CCP service for these contracts can be appropriate explained by novation theory.

Section B. The clearing process of CCP

CCP will carry out its function of clearing after trade process. The well-known advantage of CCP clearing is multilateral netting that can reduce the amounts of settlements and rapid the cash payout. On the surface, netting is like a simple calculating tool, for example, assumed that Company A owes 100 million Euros to Company B, Company B owes 70 million Euros to Company C, but C owes 100 million to A. According to the mutuality of debt, there are three amounts of debt that A pays B 100, B pays C 70, and C pays A 100. However, under the multilateral netting, if there are regularly business transactions among companies, all the parties will pay to or be paid by the clearinghouse. Clearinghouse can use its own debt claim owed by B to set off against the amount paid to A, finally it means that C pays A 30 and A pays B 30.

It seems that netting is based on the application of set-off. From the legal perspective, the validity of netting is not long established as set-off.[165] Thus the

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[164] Chicago Mercantile Exchange, SEF rules, Art 800, page 61

[165] Netting arrangement was widespread used as a clause in ISDA agreement, but it is not acknowledged as a legal right as set-off.

definition and development of netting and set-off shall be introduced to better understand the clearing.

I. The definition of set-off and traditional types of set-off

Set-off is widely used and hard to be defined. Wood defines set-off is the discharge of reciprocal obligations to the extent of the smaller obligation. It is a form of payment.[166] As an accounting tool to mitigate the debt claims, upon what circumstances will the condition of set-off be satisfied? In the civil law jurisdiction, there are some requirements for set off: (1) the claim and cross claim must be mutual; (2) the primary claim and the cross claim can be money debts or the same kinds of good;[167] (3) the cross claim shall be enforceable.[168] In the common law system, set off could be divided into legal set-off/ set-off and equitable set-off. Legal set-off requires: (1) that the claim and debt must be mutual; (2) that the cross-claim debt shall be for money debt, or money demands which can be ascertained with certainty.[169] Unlike the former law jurisdiction, the statutory set off of common law is only relevant to money claims and both claims must be liquidated and clearly ascertainable. The equitable set-off in common law gives the judge discretion in deciding the allowance of set-off. Based on the rule of equity, the judgment of equity court is uncertain. The elements often evaluated are arising out of the same transaction,[170] and liquidity,[171] hence whether the cross-claim shall be liquidity is not a certain requirement. It means that the equity elements are the most important part considered by judge to make a decision. These equity requirements are not very

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[166]Philip R.Wood, Set-off and Netting, Derivatives, Clearingsystems, 2nd edition 2007

[167] BGB § 387

[168] From other opinion, the claim against which set-off is declared need not to be enforceable, it is sufficient if it can be effectuated (Erfüllbarkeit) ; Christiana Fountoulakis, Set-off Defences in International Commercial Arbitration: A comparative Analysis, 2011, Hart Publishing, p.73

[169] A debt is "liquid" when it is certain, and its amount determined, UNIDROIT, The principles of international commercial contract, Section 8 set-off https://www.unidroit.org/publications/513-unidroit-principles-of-international-commercial-contracts

[170] "the cross-claim is inseperately connected with the transaction that gave rise to the claim", Bank of Boston Connecticut v European Grain and Shipping Ltd 1989 1 AC 1056.

[171] 'the sum must be due and payable, or in the case of unliquidated damages, must be a reasonable assessment of loss, made in good faith', the type of set off, http://uk.practicallaw.com/4-107-7242

explicit as requirements in legal set-off. Equitable set-off arises not from independent and mutual debt, but mostly from the breach of duty by plaintiff – creditor,[172] thus it is rare relevant to the set-off issue between financial institutions.

Contractual set-off is independent of the other types of set-off. As mentioned above, the preconditions of legal set-off are prescribed by statutory and that of equity set- off are based on equity rule. It is different that the circumstances to execute contractual set-off are setted by both parties of contract. The privilege to use contractual set-off is that the party could expand the circumstances where the set-off can be applied, even though these circumstances may be contrary to the common law set-off.

The circumstances are usually changed by parties are: (1) the contingent or unliquidated amounts, such as the derivative contract prices, are admitted to set-off; (2) early set-off the amount not until the commencement of litigation (3) the mutuality of contract could be break. This situation is called triangular set-off, allowing A set off the amount that A owes to B against any amount that B owes to C. The validity of triangular set-off is disputable. In collier on bankruptcy, the agreement made by bilateral party shall be respected. Both English law and New York law support the modification of set-off right by agreement and some court assert that the non-mutual debt can be offsetted in an agreement under special circumstances.[173]

However, In *re Sem Crude,* the court decided that a contractual triangular set-off agreed between parties is conflict with the federal bankruptcy law § 533 and invalid and it is improper to expand the right to set-off beyond the bankruptcy law.[174] Even though some legal opinions advised that parties of financial derivative contracts shall notice the legal force of non-mutual set-off in their

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[172] Benjamin Geva, Rights in bank deposits and Account Balances in Common Law Canada, 28 B.F.L.R.1, Banking and Finance Law Review, November 2012, p.8

[173]In re Hill Petroleum Co, two entities under common control attempted to set-off debts to a bankrupt third party. The court asserted that the exception tot he general rule against set-off would apply if a formal agreement existed between the parties.

[174] In re Sem Crude, 399 B.R.388 (Bankr. D.Del. 2009)

agreement, there is no court decision address the issue about the financial contract set- off subject to safe harbor (sections 559 through 561) and the regulation in bankruptcy law.

In 2009, the New York South District court in its judgment *of Lehman Brothers v. Swedish Bank* stated that "Congress had intended to establish a plainly worded exception to the rule limiting set-off to mutual pre-petition claims, it would have done so explicitly". [175] The court did not permit that Swedish bank uses its pre-petition claim based upon ISDA agreement to hold against the deposit account at Swanbank by Lehman Brothers Holdings Inc. (LBHI) in the post petition period. This judgment was held by scholars as a narrower protection of market participants, because many derivative market participants trade these contracts through different affiliates for regulatory capital and other reasons.[176]

Insolvency set-off, unlike other types of set-off as defenses to prevent cross claims, is a substantial right prescribed in different insolvency law by countries. This type of set-off is not used to describe a "newly- constructed set-off right" but confirms the existed set-off rights by court in the insolvent proceedings.[177] Insolvency set-off is automatically and mandatory applied, substitutes other types of set-off when one party is in insolvent, and can not be excluded by the contract arrangement by parties. The specialty of insolvent set-off is that it gives the assertor of set-off the position as a secured creditor.[178] It means that the party who set-off against the cross-claim can get the full amount under the contract rather than get payment from remaining property of an insolvent party pro rata with other unsecured party, so it is an exception of pari passu rules. Because of the above-mentioned reason, there are some prerequisites by the application of insolvency set-off.

[175] In re Lehman Bros. Holdings Inc, No. 08-13555, (Bankr. S.D.N.Y.Sep 17,2009)
[176] Peter Marchetti, Lehman Decision held that mutuality must exist to excise a right of set-off, 29-AUG Am. Bankr. Inst. J.30, p.74.
[177] American Jurisprudence, Second Edition, 9C Am. Jur. 2d Bankruptcy § 2736
[178] Joanna Benjamin, Financial Law, 2007, Oxford University Press

Insolvency set off still requires mutuality[179] and retroactive to the insolvency date. The cases referred to contractual set-off mentioned before are mainly discussed the conflict between contractual triangular set-off and regulations in bankruptcy law. In normal conditions, the bankruptcy law does not protect non-mutual contract debt if debts are independent.[180] There are some alternatives to triangular set-off put forwarded by practitioners, for example, the contract is subject to the safe-harbor rule in US and is not restricted to automatic stay, which prevents the creditors to collect the asset or collateral from insolvent debtor. [181] Firstly, in this situation, the contract shall be categorized as ‚swap agreement' that safe harbor rules are appropriate to apply. But in many cases, the cross-affiliate set-off is based on the contract of normal business transaction rather than financial contract. In addition, the safe harbor rule shall not in conflict with the requirements of insolvency set-off. Prior to the amendment of bankruptcy act in 2006, the mutual requirement was maintained in Section 553 and Section 362 in bankruptcy law.[182] However, in 2006, the legislator deleted the word "mutual" in the safe habour provisions excluded from automatic stay. [183] Since there are no other explicit evidence to prove the Congress's intent on excluding the mutuality and the court of *Lehman Brothers v. Swedish Bank* denied the contractual triangular set-off under derivative contract, The contractual triangular set-off is not safe by application of safe harbor rules in bankruptcy law.

Insolvency set-off includes all contingency debts, future debts and liabilities in unliquidated amount.[184] In this case, future debt or contingency debt is not equal to unliquidated debt. These two types of debt can convert to liquidated debt when the liquidation is proved in the insolvent proceedings and the liquidator or

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[179] The UK Insolvency Rules 1986, Rule 4.90 Mutual credit and Set-off

[180] 11 U.S. Code § 553-Set off

[181] 11 U.S Code §362 Automatic stay

[182] 11. U.S Code § 553 (a)-Set off "Except as otherwise provided in this section and in sections 362, 363 of this title, this title does not affect any rightof a creditor to offset a mutual debt owing by such creditor…."

[183] No mutuality requirement in 11 U.S Code §560, 561

[184] Benjamin Geva, Rights in bank deposits and Account Balances in Common Law Canada, 28 B.F.L.R.1, p.10

administrator can evaluate the amount of debt.[185] In many jurisdictions, the unliquidated damage can not be set off by an entitled debtor against the insolvent party if the debtor owes the insolvent party any liquid debt.[186]

However, the insolvency set-off of future obligations is not appropriate for financial contracts. Many claims arise from swap contracts are contingent debts, if these claims were evaluated by insolvency office holders, the whole financial market would be threatened by systematic risks. One reason is that a creditor may take great losses if the underestimated payment of one contract based on insolvency set-off can not hedge its debt payment to another contract. Otherwise, the insolvency set-off can only be applied after the automatic stay. These restrictions in insolvency set-off are in conflict with the financial transactions that need sufficient and fast payment. Thus there are two approaches to protect the non-default party of the financial contract: one is the exception of automatic stay that permits the non-default party seize the collateral of the insolvent party; Another is the enforceability of close-out netting clause that terminates the contracts with defaulting party and combines all positive or negative value under the contract into one single payment.[187] These two methods ensures that the non-defaulting party can get the payment timely if its counterparty is insolvent, excluding the application of insolvency set-off.

II. The definition and application of netting

As aforementioned, the legal basis of close-out netting is contractual set-off right, but the range of application of netting is wider than set-off right. The financial Markets and Insolvency (Settlement Finality) Regulations 1999 defines netting as:

the conversion into one net claim or one net obligation of claims and obligations resulting from transfer orders which a participant or participants either issue to, or receive from, one or more

[185] Louise Gullifer, Jennifer Payne, Corporate Finance Law: Principles and Policy, 2015, Bloomsbury Publishing, p.226
[186] Citbank Canada v. Confederation Life Insurance Co, 1996 8269 (ON SC)
[187] ISDA research note, The Importance of Close-Out Netting, by David Mengle, page 2, Number 1, 2010

other participants with the result that only a net claim can be demanded or a net obligation be owed.[188]

From the above definition, a result could be concluded that the legal effect of netting is same as that of set-off: two mutual debts will be discharged and replaced by a net-single amount between two parties.

However, these two definitions are partially overlapped. (1) In the analysis of set-off, these two definitions origin from different legal resources, unlike set–off rights based on the statutory or equitable law[189], netting is acknowledged by the arrangement between two contractual parties and this term is rarely find in other types of contract except financial contract; (2) contract parties can arrange multilateral netting, but set-off rights is mutual in born. In fact, multilateral netting arrangement expands the application of triangular set-off and involves more parties and different types of financial transactions. However, if triangular set-off is not admitted by bankruptcy law, the validity of multilateral netting is in doubt. The intervention of CCP between multilateral parties will probably solve the mutuality problem and detailed analysis of this issue will be described as follows. (3) Another difference between these concepts is more theoretical that in netting agreement there is no cross-claims existed between counterparties of derivative contracts but a single netting claim based on the two opposite cash flow.[190]

1. The different types of netting

a) Payment netting and novation netting

Payment netting (position netting) is a calculation method usually used in the course of business. Novation netting means that if the parties enter into a transaction that give rise to an obligation for the same value date and in the same

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[188] Directive 98/26 EC Art 2(k)
189 ISDA report, Netting and Offsetting: Reporting derivatives under U.S. GAAP and under IFRS, May 2012, p.9, p.10
[190] ISDA master agreement Section 2 (c) netting of payment “each party’s obligation to make payment of any such amount will be automatically satisfied and discharged…”

currency as an existing obligation, then the two obligations are cancelled and simultaneously replaced with a new obligation for the net amount.[191] The mutual obligations of payment netting will be discharged and the net amount will replace the gross amount when obligations are due to be paid. Payment netting is not different from set-off.[192] Before the payment date, all the obligations are seperate and each party has the obligation to pay gross amount to its counterparty. ISDA master agreement 2 (c) prescribed that the netting amount would be payable and in respect of the same transaction, and netting amount can also be payable in respect of more transactions. It means that different kinds of derivative products can be netted under the master agreement. Whereas countries such as England, which follow a rigid set-off rule, permit the claims based on the same contract or legal relationship can be set-off. One issue shall be noticed is that the multiple transaction payment netting prescribed in ISDA is not same as the multilateral netting which actually has the same effect of triangular set-off. If no party is insolvent, there is no other objection to the contractual netting arrangement because the arrangement is voluntary made by parties. Whereas multilateral netting will not be acknowledged by the insolvency law as triangular set-off, the clearinghouse as a principal of the bilateral derivative is a necessary step to the legal certainty of multilateral netting arrangement.

The party substitution process of CCP is in detail described in aboved sections. For CCP clearing, CCP is a principal rather than a clearing agent in the contract. The most famous case referred to CCP multilateral netting agreement is British Eagle International Airlines Ltd v Compagnie Nationale Air France. In this case, IATA (International Air Transport Association) has a clearinghouse that provides on time settling of interline accounts between the world's airlines. British Eagle was one of IATA's member and was insolvent, the liquidator of British Eagle claimed against one of its debtor Air France to pay full amount of the debt.

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[191] What is netting, How does netting work? A presentation from New York Fed, https://www.newyorkfed.org/medialibrary/microsites/fmlg/files/Millerspresentationonnetting.pdf; Benjamin Geva "The Clearing House Arrangement." Canadian Business Law Journal 19 (1991): 138-165.

[192] ISDA report: Netting and offsetting : Reporting derivatives under U.S GAAP and under IFRS, page 11, para 1.

However, Air France defensed that British Eagle had only a claim against IATA, which offsets mutual transactions of airline members to a single payable or receivable amount. [193]

Most discussions of this case concentrate on the matter that the IATA clearing arrangement violates *pari passu rule* in insolvency law.[194] However, whether IATA is the party of contract is an important issue. It is actually about the relationship between clearing member and clearinghouse. If IATA were novated as a Party of the original obligation, the multilateral netting would not have been repudiated on insolvency law.[195] Novation netting shall include substitution (novation) of party, but the opinion on the time of occurrence of substitution was divided between judges. The majority opinion held that the "substitution" was occurred after clearance and the definition of clearance is that the clearinghouse calculated the net amount between parties and noticed them the amount. [196] Whereas the dissenting opinion held that the substitution was emerged when two bilateral obligation arose, because the substition of party is one part of netting by novation and this type of netting means that a new obligation replace the mutual obligation between original parties. [197]

This case obviously discloses the distinction between payment netting as set-off and novation netting. Upon the payment netting definition, the original mutual debts between British Eagle and Air France were still separately existed and can not be netted to one amount based upon CCP arrangement after the commencement of liquidation. As a result, some obligations of contracts could be discharged and calculated to a net amount during the clearing process, but the netting of uncleared mutual obligations was declined by court. Otherwise there is no real party substitution according to the analysis of majority opinion of the case; therefore, the claims of British Eagle against Air France can not be reduced

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[193] IATA .org

[194] For example, Louise Gullifer and Jennifer Payne, Corporate Finance Law, Principles and Policy, Hart Publishing 2011, p.186

[195] Benjamin Geva, Canadian Business Law Journal, 19 (1991) (Geva, The Clearing House Arrangement, 1991)

[196] British Eagle International Air Lines Ltd v Compagnie Nationale Air France [1975] 1 WLR 758

[197] British Eagle International Air Lines Ltd v Compagnie Nationale Air France [1975] 1 WLR 758

by the sum that British Eagles owes to other Airlines. If the netting agreement were based on netting of novation, there is only one claim between IATA and British Eagle and the situation that part of the contracts could be netted and others are not would not be in existence. The liquidator can just accept or refuse the whole claim. In addition, if there is real party substitution under the novation netting, the claims between British Eagle and Air France will be substituted as the claims between British Eagle and IATA, then this situation satisfies the mutuality requirement of insolvency set-off and no pari passu rule is violated.

In Professor Geva's opinion, the netting of novation is permitted, provided a pre-insolvency substitution had existed, but the time of party substitution shall be made when the new bilateral obligations are emerged.[198] Only position netting of bilateral obligation will be acknowledged in insolvent law if no party substitution processed in the multilateral netting agreement.

Netting by novation is not often used in comparison to the other types of netting process: position netting and close-out netting. One reason of the existence of netting by novation is that single agreement provision is based on it. Upon the single agreement provision, all the contracts between two parties will be consolidated into one contract when each new contract entered into.[199] Based on the definition of netting by novation, the payment discharged by bilateral parties is net amount rather than gross amount, reducing the credit risk of one party when its counterparty is in insolvent. This net amount is the only amount of a single agreement. If one party as creditor is insolvent, another party will only pay the net amount to its counterparty on account of netting of novation and the administrator in bankruptcy can not use the right of cherry -picking because there is one contract rather than different contracts between two parties. The netting of novation is still valid even though the court does not admit the validity of close-out netting and the financial stress of the solvent counterparty will be alleviated. Novation of netting can be used at multilateral level if the party

[198] Benjamin Geva Canadian Business Law Journal, Volume 19 1991 (IASB, 2010)

[199] IASB staff paper
https://www.drsc.de/app/uploads/2017/03/152_04b_IASB_AP11_Offsetting.pdf

substitution is completed. CCP as the counterparty of all the parties will net all the net amount between parties. This net net amount reduces the counterparty risk of each party and parties can provide less collateral under CCP clearing.

b) Close-out netting

Unlike the two types of netting which normally take place between solvent parties, close-out netting is often used between one default party and another non-default party and endows the non-default party with the right to terminate the contract between parties and aggregate the value of the combined obligations when the termination event was occurred. The application of close-out netting is limited and this provision is agreed in a financial contract arrangement or in a master agreement. If a country acknowledges the legal effect of close-out netting, whether the payment obligations between parties are individual or combined to a new one is not a significant issue here. In the Directive 2002/47/EC, the obligations of parties can be express as an obligation or all the contracts are terminated and replaced by an obligation. Only the net amount is paid from one party to another. [200] The admission of close-out netting makes the novation netting not so important and avoids the legal risk existed in novation of obligation that the validity of all the transaction under master agreement may be affected if some transactions are invalid. [201]

Since close-out netting is generally accepted as a way to reduce counterparty risk between financial institutions, international organizations are committed to unifying principles of this type of netting and many jurisdictions acknowledged the enforceability of it. For example, the UNIDROIT published principles on the operation of close-out netting provisions and the countries where derivative transactions occupy a large part of OTC market admit the close out netting, such as US, UK and Germany. ISDA master agreement, which widely used by derivative counterparties, prescribed this netting provision in section 6. The process of close out netting includes three steps: The first is the non-default

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[200] Art 2 (n), Derective 2002/47/EC of the European Parliament and of the Council of 6 june 2002 on financial collateral arrangements

[201] Zerey, Finanzderivate Rechtshandbuch, 3rd ed. 2013, Nomos, p.331

party can terminate all the transaction with default party based on its unilateral right. The second is the valuation of contract under reasonable price and the last step is the calculation of net amount between parties.

Upon the netting principles in the UNIDROIT, close-out netting can be used by “central clearing” mechanisms, which are essentially built on bilateral relationships.[202] The bilateral parties of ISDA master agreement can also use the netting provision. However, the contractual multilateral netting including more parties, such as cross-affiliate set-off mentioned above, is not included in the principle.[203] From this point of view, mutuality is still a precondition to the application of close-out netting.

Although derivatives cleared through CCP is novated by the original contract between two parties. CCP as a counterparty that absorbs the default risk of each original party is different from a normal eligible counterparty or financial institution. As a “qualifying central counterparty”[204], the institution calculates its transaction pursuant to Art 295 to 298 of CRR. In accordance with the rule Art 295 (a) CRR, the calculation of the differential value is on the net basis, which means that CCP actually accepts netting by novation rather than payment netting during the clearing process.[205] The cross-product netting by CCP is still discussed between market participants. Therefore the enforceability of cross product netting documented under the same ISDA agreement may be impaired, inducing the calculation of exposure value between two parties of ISDA agreement based on gross amount. Even though the CCP accepts netting by novation, the close out netting which confirms the net obligation is important to both financial and non-financial counterparties. The reason is that a deficient

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[202] Principles on the operation of close-out netting provisions, UNIDROIT 2O13, p.12, para 27 https://www.unidroit.org/english/principles/netting/netting-principles2013-e.pdf

[203] Principles on the operation of close-out netting provisions, UNIDROIT 2O13, p.12, para 28

[204] Article 14, Article 25 Regulation (EU) No.648/2012

[205] Art 295 (a), Section 7, Regulation (EU) No 575/2013 “the novation fixes one single net amount each time it applies so as to create a single new contract that replaces all former contract and all obligations between parties pursuant to those contract and is binding on the parties.” Therefore, there is only one contract and one obligation to make payment.

collateral level will be raised if some products excluded create gross exposure. [206]

Close-out netting is different from set-off that on the occurrence of a specific event, the contract between parties are terminated or accelerated so that all the obligations, whether they are certain or contingent, become due. It shall be noticed that the close-out netting is based on monetary claim and the clause can be recognized in the financial collateral arrangement.[207] The early termination right is an important part of close-out netting, because the calculation of net amount can be achieved on the condition that all obligations are due and payable. This right is given to the non-default party and an early termination date can be designated in respect of all the transactions. This early termination date has deemed before the insolvency event, avoiding the legal risk in some jurisdiction that the open of insolvency process overrides contractual arrangement. In addition to the right of termination, there is another way provided by ISDA master agreement, which is that the non-default party can withhold the payment to default party upon article 2 (a) (iii). Whereas this way of protection does not terminate the outstanding contract and invoke the close-out netting, The insolvency law in some jurisdictions such as US will not protect withhold payment of creditor, even though US law prescribes "safe harbor" rule for derivatives contract. [208]

As we have mentioned before, many jurisdictions acknowledges the legal enforceability of close-out netting provision. However, the enforceability has two

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[206] ISDA, Part 2.5 Guidelines for collateral practitioners, ISDA

[207] Article 7, Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on financial collateral arrangements. In accordance with the commentary on UNIDROIT principles 4 on the operation of close-out netting, the "eligible obligation" includes title transfer collateral arrangement related to eligible obligations, which means that the proprietory right on the asset based on traditional security arrangement such as pledge can not be netted against the monetory claim. The security financial collateral arrangement with the right of use is an exception and explained in the next chapter.

[208] Guide Note on the form of Amendment to ISDA Master Agreement for use in relation to Section 2 (a) (iii), note 3. https://www.isda.org/book/reporting-guidance-note/;
In re Lehman Brothers Holdings, Inc, et, al, Judge James Peck held that the Bankruptcy Code only protect the right to "liquidate, terminate or accelerate" and "offset or net out"; In order to benefit from the safe harbor a creditor must act promptly. It implies that the bankruptcy law in US protect only the early termination right in article.

tier meanings: 1) This provision is enforceable under the governing law of contract (such as English law or New York law based on ISDA master agreement or German law based on DRV); 2) the consistency with the local bankruptcy law.[209] The conflict of contractual set off and netting arrangement with mutuality requirement of insolvency set-off is very detailed explained, showing that the latter meaning of enforceability is more disputed because it is out of control of the intent of parties. From this aspect, the regulations in insolvency law may not only make financial contract arrangement invalid because it prejudices other creditors but also impose restrictions on the right of creditors even though the law admits the net payment between parties.

These restrictions include situations in which the early termination clauses can be triggered and whether or to what extent a moratorium (like automatic stay) shall be imposed on close-out netting provision. After the financial crisis, an opinion is raised that unrestricted close-out netting on the occasion of bank resolution poses a threat to the stability of financial market and this volatility shall be cured by legal measure.

Title II of the Dodd Frank Act in US and BRRD (Bank Recovery and Resolution Directives 2014) recognize the "stay" of termination right if an institution goes into resolution. The summarization of the regulations of stay is that the non-default party of a qualified financial contract can not terminate or net the contract if the property transfer could be operated and the transfer activity does not trigger a default event. Aiming to improve cross-border recognition of resolution, ISDA 2014 Resolution Stay Protocol based on new rules applies to bilateral OTC contract and incorporate the stay recognition provisions.[210] From the aspect of CCP clearing, even though the BRRD article 49 recognized the liability to be determined on a net base, the right of CCP is still affected by stay, if CCP's clear member which is usually a financial institution goes into the situation

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[209] ISDA report, the legal enforceability of the close out netting provisions of the ISDA master agreement and their consequences for netting on financial statements, p.2 https://www.isda.org/a/FgiDE/the-effectiveness-of-netting.pdf

[210] ISDA resolution stay protocal-background, https://www.isda.org/a/c7iDE/resolution-stay-protocol-background-final.pdf

of resolution. Centrally cleared derivatives will take a great proportion in derivative transactions after the mandatory requirement prescribed in European Market Infrastructure Regulation (EMIR). When the derivative contract between clearing member and CCP are closed out, whatever ETD or OTC cleared contract, CCP will use its own default process upon clearing house rules to establish its replacement cost. [211] These default processes that manage credit risk of CCP are pursuant to EMIR and the derivative contracts that are closed out under these processes shall not be bailed in upon BRRD.

From the view of exchange, the requirement of stay or moratorium on close out netting will prevent the CCP from effectively taking its own process to close-out contract and apply collateral to offset the clearing member's contract obligation. [212] Since one important function of CCP is to ensure the liquidation in financial market, the stay will impair the CCP's function as liquidity partitioning.

There are some renowned scholars assert that netting is a tool that externalizes counterparty risk rather than reduces it. The netting agreement only changes the creditor priorities because the set-off right contained in the agreement can be seen as a way of providing security to the non- default party.[213] This measure does not improve the benefit of all creditors. Another reason in favour of netting that most clearing members are financial institutions is refuted by these scholars. They assert that many outside creditors that are not included in the protection are also financial institutions such as bank lenders and money market funds.[214]

A view put forward by Richard Squire explains why no stay of termination of CCP close-out netting is benefit to prevent the systemic risk. While set-off can

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[211]Final Report, Draft RTS on the valuation of derivatives pursuant to Article 49 (4) of the Bank Recovery and Resolution Directive (BRRD), p. 11 https://www.eba.europa.eu/documents/10180/1312572/EBA-RTS-2015-11+RTS+on+the+valuation+of+derivatives.pdf

[212] LSEG (London Stock Exchange Group) response to the FSB Consultation on Effective Resolution of Systemically Important Financial Institutio (EBA, 2015)ns, p.3, http://www.fsb.org/wp-content/uploads/London-Stock-Exchange-Group.pdf

[213] Pirrong, Craig, The Clearinghouse Cure (February, 18 2009). Regulation, Vol. 31, No. 4, Winter 2008-2009. p.47; J Mark, Roe, Clearinghouse overconfidence, California Law Review , Vol 101 Issue 6 2013, p. 1667

[214]Pirrong, Craig, The Clearinghouse Cure p.49

avoids the time consuming application of pro-rata rule in bankruptcy procedure, it executes not immediately because of automatic stay.[215] However, the faster payment is very helpful to the financial institution who are lack of liquidity and endure the dangerous to collapse. From the view of Squires and other scholars, a financial institution that entered in bankruptcy is more creditworthy than the financial institution endangered by the default of the institution in insolvency, because the failed institution can collect new loans to pay its administrative debts.[216] If a fast payment to derivative creditor can be made without reducing the benefits of other unsecured creditors, it will achieve the Pareto efficiency.

Return to the example of three institutions: A owes B, B owes C and C owes A. These institutions can make multilateral netting via CCP, because CCP will net the net amount between these parties. In the situation without netting, C burdens the default risk of B and have debt obligation to A. B as a bankrupt institution does not need cash payment as urgent as C does. Whereas under the situation of CCP clearing, A can offset its obligation to B against the obligation that B owes C. The mismatch problem can be resolved via the CCP netting process. Otherwise, since many financial derivative based on speculation are terminate the contract with cash payment rather than delivery obligation and CCP can use its default process to determine contract value and ensure the payment, CCP is a tool that can maximized remedy the unliquidated problem between financial institutions.

C. Summary

This part discusses the legal basis of CCP novation and netting process and shows that close-out netting is an important precondition to calculate the net amount between parties then use collateral to replace the payment. The next part will discuss the collateral management of CCP that is also a measure to

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[215] Richard Squire, Clearinghouses as Liquidity Partitioning, Cornell Law Review, Vol 99, Issue 4 2014, p. 894

[216] Richard Squire, Clearinghouses as Liquidity Partitioning, p.898; Kenneth Ayotte & David A Skeel, Jr, Bankruptcy Law as Liquidity Provider, 80 University of Chicago Law Review 1557 (2013) p.1557, 1589-90

prevent credit risk and the protection of client account when one clearing member defaults.

Chapter 3. Striking the balance between financial collateral management of central clear counterparty and the protection of client asset

The margin requirement of CCP secures its payment capacity to afford counterparty risk. If one clearing member (CM) is obliged to pay money to CCP, CCP will use the collateral posted in that CM's margin account to pay the non-defaulted party of financial contract. In EMIR, the meaning of clearing includes ensuring that financial instruments, cash or both are available to secure the exposures arising from those positions.[217] From this aspect, margin to some extent could be replaced by the term "financial collateral". The definition of and

[217] Regulation (EU) No 648/2012 Art 2(3)

what items included in "financial collateral" as a background shall be better explained to analyze the call of margin by CCP.

A. "Margin": a name of financial collateral in future and OTC contract

In the normal process of business, tangible assets and intangible assets can be used as collateral, if the jurisdiction law permits that asset included within the context of collateral. Why financial collateral is special in the collateral, are not they all used to prevent the default of another party? It points out that an important characteristic of financial collateral is the liquidity of that asset.[218] Unlike those normal tangible or intangible assets, the liquidity assets, such as cash or securities, that are used by collateral taker to meet debt payment in a short time. This liquidity is achieved from two aspects: one is that the market value of financial collateral itself is easy to evaluate without or just with limited haircut[219]; another is that the enforcement of financial collateral shall distinguish from the normal process involved by court.[220] However, the "self-remedy" measures taken by collateral taker entail risks that the court may nullify these enforcement measures based on self-dealing, unauthorized foreclosure or other activities impairing the benefits of all creditors. Under this background, how could CCP protect itself as a collateral taker will be explained in the latter part, first we should discuss how the mechanics of margin arranged and the interaction between margin and CCP clearing.

I. What is margin and the types of margin

As above-mentioned, what included in the collateral is regulated by different jurisdiction law. There is no exact word of "financial collateral" in US law.[221] In

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[218] Louise Gullifer, What Should we do about Financial Collateral, Current Legal Problems, Volume 65, Issue 1, 1 January 2012, Pages 377–410, p.380 https://doi.org/10.1093/clp/cus001

[219] Cash and securities can convert to cash quickly, strongly support the reason mentioned above, but some complicated bonds are hard to find the value. The price will severe fluctuate with the movement of financial market.

[220] Directive 2002/47/EC, Art 4.4 " The manners of realizing the financial collateral referred to in paragraph 1 shall…be without any requirement to the effect that: (b) the terms of the realization be approved by any court, public officer or other persons;"

[221] UCC §9

the EU area, for harmonizing the application of different law in the EU financial market and promoting the efficient usage of collateral, the Collateral Derivative (2002/47/EC) clarifies cash or financial instruments are subject to the definition financial collateral.[222] It should be noticed that cash is not just cash but money credited to an account in any currency, such as money market deposits. [223] Since the legal nature of cash is that possession equals to the right of ownership, cash shall be particular stayed in one place to achieve the pledge of money. However, another term financial instrument has a broad meaning, ranging from money market shares to credit claims.[224] From the articles of EMIR and Financial Collateral Directives, it is not hard to understand that there is a broad range of instruments as liquidated assets that could be used as margin.

Even though many assets could be used as margin theoretically, it depends on the counterparty as collateral taker what assets are acceptable. In the Article 41 of EMIR, CCP shall adopt model and parameters to set its margin requirements, [225] It is generally considered that CCP's frameworks are the narrowest context regarding acceptable margin collateral compared to central bank's framework and regulatory framework since high-quality liquid assets can better guarantee its function as market cushion[226]. However, some CCPs such as Eurex Clearing only accept securities traded on an exchange with market prices, while others may accept more types of assets.[227] It seems that CCP does not need so many high-quality liquid assets as people imagined by the use of appropriate risk management techniques.

One important characteristic to distinguish margin from security deposits is the underlying transactions to which the two different assets related. In the general stock market, the investors make full payment of security deposit in cash

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[222] 2002/47/EC, Art 4 (a)
[223] 2002/47/EC, Art 2.1 (d)
[224] 2002/47/EC, Art 2.1 (e)
[225] 648/2012/EC, Art 41.2
[226] European Central Bank, Collateral Eligibility Requirements: A comparative study across specific frameworks, July 2013, p. 4
https://www.ecb.europa.eu/pub/pdf/other/collateralframeworksen.pdf
[227] European Central Bank, Collateral Eligibility Requirements: A comparative study across specific frameworks, p.43

account to buy stocks and brokers are only agents of their client to buy and sell. There is no leverage value in general stock transaction.[228] However, the margin laid down for future or OTC transactions secures the difference in price. It is not necessary to make the down payment of contract price initially. Therefore, the amount of margin collected based on future or OTC contract depends on the volatility of price in the future.

Based on the reason above mentioned, the margin could be devided into initial margin and variation margin. These terms are already used in financial market for a long time. Before implementing compulsory clearing requirement, collateralization for OTC derivative transaction is not a compulsory requirement unless it is established by statute or contract. Otherwise, the credit risk management is decided between parties and the initial margin is not required to post as well.[229] If collateral is not required to secure the contract, a party will subsequently enter into another derivative contract, which has the opposite position to the previous contract to hedge the exposure risk of the previous one.

Initial margin (IM) serves to cover the additional liquidation costs that potentially could be occurred[230], usually, the IM can cover the exposure that is calculated within 24 hours and the collateral provided as IM are cash or securities. The Variation margin (VM) is not collateral but reflects the daily change of the market value of a contract. If a client's equity falls below the initial margin requirement, a broker may request its client to provide the additional fund to keep up the adverse movement of the market.[231]

II. Margin provided under central clearing

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[228] Except the process of buying stock on margin. The definition of "margin" in this context is different from the margin we have discussed in the article. It means using credit to purchase stock, for example the initial margin 30% means that the investor provides 30% of the amount of money needed to purchase the stock.

[229] Independent amount, white paper final, p.6, ISDA, isda.org

[230] Initial margin, Eurex exchange.com

[231]FinancialGlossory, Reuter, http://glossary.reuters.com/index.php?title=Variation_%20Margin&diff=11341&oldid=11340%20

1. Provision of margin between CM , CCP and clients

Under the contract relationship between CM and CCP, CCP has the right to call initial margin and variation margin from clearing member to cover the credit exposure to transaction that could be a proprietary business or an agent business of CM. Unlike IM, the only aim of VM is to cover the daily profits or losses for the transaction.[232] Providing VM is bilateral claims, if a CM loses money, CCP will call extra VM to meet the loss. On the contrary, if CM gets profit, the VM is paid by CCP to its account. VM will be calculated in cash so that daily clearing can be achieved by such a high liquid asset. It could be supposed that the calculation of VM is accuracy and there are no excess VM given above the amount of transaction by contract parties.[233] In contrary to VM, the submission of IM by CM to CCP is in advance to cover the future claim of CCP. The types of asset that used as IM is wider than that of VM, including the financial instruments which meet the conditions of regulation.[234] Since all credit risks are concentrated within CCP itself, on the condition that the market fluctuates severe, there will be a delay before the new collateral calculated, called and settled. Otherwise, IM is a one-side obligation and will be posted by CM to CCP.

From the aspect of client, there is no privity of contract between it and CCP. The clearing member involved in the transaction represents the client to be the counterparty of cleared derivative contract, because only CMs are eligible to clear their transactions by CCP.[235] Before requiring derivative contract centrally cleared, the margin obligation between parties is prescribed in Credit Support

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[232] Commission Delegated Regulation (EU) 2016/2251 of 4 October 2016 supplementing Regulation (EU) No 648/2012 , Art 1, variation margin means the collateral collected by a counterparty to reflect the results of the daily marking to market or marking to model of outstanding contract.

[233] General clearing provisions 7.3, Eurex margin is usually daily called (T+0) General clearing .If the CM can not post the variation margin timely, CCP will lose the defaulted amount in one trading day. For the calculation , if the profits amount determined for the benefit of Variation Margin Provider is higher than its Redelivery claim as of such time, the payment of the excess amount of by the other party constitutes itself a delivery of Variation margin, so that the balance is always maintained

[234] Commission Delegated Regulation 153/2013/EC of 19 December 2012 supplementing Council Regulation 648/2012/EC, Annex 1

[235] 648/2012/EC, Art 2.(14), “clearing member” ...is responsible for discharging the financial obligations arising from that participation

Annex (CSA) incorporated into the master agreement. To compliance with the new regulation, new template was published by associations such as ISDA/FOA client cleared derivatives addendum. The new change of the collateral agreement reflect the clearing rule of CCP so that the client does not have right to terminate the contract.[236] Another example is that the amount and the frequency of margin call shall in accordance with the rules of CCP.

Actually whatever the name is, CSA or other addendum includes financial collateral arrangement (FCA) between CM and its client. Client posts IM and VM to its clearing member based upon the agreement. In the bilateral framework earlier, the financial collateral agreement can negotiate between the buy-side client and the financial institution such as banks to meet the particular purpose of client. It is not hard to understand that the more flexible the providing of collateral is, the more clients will be attracted to engage in the transaction by the reason of lower margin requirement. Furthermore, the terms in FCA can delegate the financial institution the right to use these collaterals and collateral management is traditionally an important part of the business of the global financial institution. However, it is mentioned above that the CCP will impose rigorous and less flexible margin requirement on its CM, through the agent and back-to-back contract model, affecting the collateral arrangement between client and CM.

2. margin transformation under CCP clearing

To meet the new margin requirement of CCP, CMs will provide the collateral transformation for their clients. They have to borrow the required assets if they could not expand the range of acceptable collateral assets.[237] It means the process of transforming ineligible collateral into the assets accepted by CCP,[238] because CCP does not transform the collateral by itself. For example, the client

[236] Section 8 (a) (i) of client cleared OTC derivatives addendum, https://www.isda.org/book/isdafia-client-cleared-otc-derivatives-addendum-eu-principal-to-principal-arrangements/

[237] Anderson, Ronald W. and Joeveer, Karin, The Economics of Collateral (April 21, 2014). Available at SSRN: https://ssrn.com/abstract=2427231

[238] Wall Street's latest idea, Financial Time's article March 4, 2013 www.ft.com

pledges some high-risk bonds to a FCM, and the FCM then performs a repo transaction to sell the bonds for money with a repurchase condition[239]; at last, CM will pledge the cash to the CCP. The reason of providing this business is based upon the assumption that there is no enough high liquid asset in the whole financial market, and the new clearing regulations will stimulate the demand for these assets. As a new business opportunity, collateral transformation triggers hot debates in the market. From the above example, we can see that a very active repo market can ensure the smooth process of transformation. Under normal market conditions, the transformation may facilitate market activity and allows some financial institution such as pension funds or insurance companies to acquire their necessary liquidity. If there is no collateral transformation, these institutions should keep more cash resulting in the restriction of their investment performance.[240] While the transformation may give rise to potential market risk. In the BIS report of collateral management, three risks are illustrated in the report: 1) Increased inherent operational risk and potential implications, because multiple movements of securities across location requires collateral manager which have adequate capacity to fulfill collateral obligation in normal and stressed market conditions; 2) risk associated with collateral optimization. It means that under the optimization model, the collateral giver may seek to provide the maximum amount of ineligible collateral to collateral taker before pledging high-quality collateral.[241] These two risks are inherent into the collateral transformation as well. There are also two risks existed in the collateral transformation. One is the mismatch between the trade that has generated the collateral requirement and the transformation trade (such as repo or securities lending) that fulfills the required collateral obligation. This risk may

[239]Ronald W. Anderson, Karin Joeveer at. p16, in this article the author considered repo agreement as a better strategy than involving an another asset swap because of the additional counterparty risk and associated collateral costs by the use of swap.

[240] Collateral optimisation, re-use and transformation, DNB occasional studies, Vol 12/No.5 (2014); a paper named EMIR:pension fund exemption on central clearing express the worries of pension service providers: (1) holding cash for VM requirements will negative impact on pensioner's income; (2) even though the collateral transformation can to some extent adress the cash VM issue, pension funds may bear the loss that they have to sell their physical assets underpriced to exchange cash to meet the cash VM requirement. https://www.pggm.nl/wat-vinden-we/Documents/pggm-position-paper-european-market-infrastructure-regulation-(emir)_13-08-2015.pdf

[241]CPMI, Developments in collateral management services, Sep, 2014, at p.19, p20.

increase when many clients are reliance on the transformation service. For example, under market in stress, the security lenders hold their eligible securities and repo transaction shrinks, therefore, the CM who could not fulfill the margin requirement of CCP will terminate the contract and clients suffer loss. Another key risk is also a time issue that there may be a mismatch between the identifying of collateral obligation and completing the transaction that provides the collateral required to fulfill the obligation.[242] A typical example is the unexpected margin calls. Since whether the settlement regulation of repo transaction is t+0 or t+1 depends on different jurisdiction and CCP's margin call is t+0 (intra- day), it is unlikely to complete two transactions in the same day.[243]

From the collateral transformation activity can be seen that, despite the regulations and CCP rules, the range of financial instruments which could be used for CCP clearing actually is wider than that required by rules. For one hand, transformation is a way to comply with the new regulation and promote the liquidity of financial market. However, this advantage is more obvious in normal market situation. For another hand, the large amount of transformation may entail risks because many derivative contracts have to be terminated when the CM can not meet the eligible collateral requirements, especially in the extreme market condition.

3. margin hypothecation: a trend to over collateralization

CCP clearing requirement also has an influence on the rehypothecation of collateral. The new CCP clearing regime restricts margin rehypothecation. Rehypothecation gives financial institutions as collateral taker the right of use of collateral pledged by collateral giver. Usually, only the re-pledge of collateral provided by pledger will be called rehypothecation. Another term "Collateral transformation" also includes the right of use, because CM will use the collateral provided to finish the transformation process. There is a nominal difference

[242] CPMI, p.21
[243] CPMI, p.22

between the rehypothecation and the use of collateral in the repo market.[244] The FSB adopts the economic approach rather than the legal approach to distinguisch these two concepts.[245] The client as collateral giver will not lose its title to the collateral until the collateral taker exercises its right. When the collateral taker repledges the collateral as a security for the client's debt to the third party, the collateral giver will lose his title but only has the right to return of collateral against collateral taker.[246] The loss of title is based on the protection of the third party rather than the secured right entitled to collateral taker. On the contrary, the re-use of collateral emphasize ensuring the title transfer to collateral taker through the repurchase agreement.[247] The buyer of collateral hold the title of collateral based upon the ownership rather than the right granted to the seller.

Traditionally In English and US law, the collateral giver (pledgor) has the equitable right of redemption[248] and it is one of the foundation rules in the equitable law system. It is pledgor's right to get the return of security after the secured transaction is paid off. There are some differences illustrated between a sale and a charge:

"the vendor is not entitled to get back the subject –matter of the sale by returning to the purchaser the money that has passed between them, whereas "the mortgagor is entitled, until he has been foreclosed , to get back the subject matter of the mortgage or charge by returning to the mortgagee the money that has passed between them." [249]

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[244] The FSB report regards the conceptual differences between the rehypothecation and the reuse. The rehypothecation only means the use of client assets but the reuse has a broad scope not limited to the client assets. FSB report, Rehypothecation and collateral re-use: Potential financial stability issues, market evolution and regulatory approaches, 25 Jan, 2017, page 3

[245] AMF report, The Reuse of Assets Regulatory and Economic Issues, November 9, 2016, http://www.amf-france.org/en_US/Publications/Rapports-etudes-et-analyses/Divers?docId=workspace%3A%2F%2FSpacesStore%2Ff40c0d62-3f93-4cf5-9a41-7c657feaaad1

[246] AMF report, at p.7, 'The These agreements indicate that the title deed remains the property of the client ("pledgor") until the prime broker ("pledgee", and who is the receiver of the collateral) exercises its rehypothecation right. As soon as the rehypothecation right is exercised, the pledge "dissolves", ownership of the assets is transferred'

[247] AMF report, at p.7 "the beneficiary enjoys all the attributes of the ownership right, therefore the right to dispose ofthe collateral"

[248] Re George Inglefield Ltd [1933] Ch. 1 CA.

[249] *Id.* The mortgagor and the pledger have the similar right which was recognized as early as 17th century.

The difference between mortgage and pledge is the possession of collateral and will not be discussed here. It should be noticed here the pledgor holds the title in the pledge covenant and has the right to redeem. The similar right also exists in civil law such as in German BGB 1223 (Rückgabepflicht).

In English law, the rehypothecation is blamed as it will impair the redemption right of the collateral giver. If the security interest of collateral taker combines with the right of use including rehypothecation, which generates a legal effect that is similar to the title transfer. For instance, if the financial institution can use the collateral given to make recollateralization by its own name, it will be an obstacle to collateral giver's right of redemption[250] because the third party as a bona fide person doesn't know who owns ownership. In the civil law country, most of the countries restrict a pledgee to use the pledged asset as though it were the absolute owner of such asset.[251] In Germany, the situation like this seems to be dealt as a form of transfer of title, albeit a limited purpose.[252] However, after the implementation of 2002/47/EC, national states permit the application of the rehypothecation or repledging of charged assets.[253] In the civil law country like Germany, the Parliament explained that the new law is unnecessary to set up, because the rehypothecation of irregular pledges has existed in the German law.[254] And in the OTC market, there is no such problem, because main types of master agreement prefer the way of title transfer (Vollrechtsübereinigung).[255] In England, the right of use may be a "clog"or "fetter" of equity of redemption, and scholars consider that in the financial market, the purpose of the use is the protection of collateral giver. As a result, the equity of

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[250]Louise Gullifer, What should we do about financial collateral; UK chapter 3 CASS 3.1.7 (G) "Under a right of use agreement, the client has transferred to the firm the legal title and associated rights to the asset. So that when the firm exercises its right to treat the assets as its own, the asset ceases to belong to the client...... no longer in the range of client asset protection."

[251] ISDA, Collateral Law Reform Group, Collateral Arrangements in the European Financial Markets-the need for National Law Reform, March 2000, at p.7

[252]ISDA, Collateral Law Reform Group, at p.7

[253] "if and to the extent that the terms of financial collateral agreement so provide" Art 5 2002/47/EC

[254] BT-Drucks 15/1853,29.10.2003, S.11 http://dip21.bundestag.de/dip21/btd/15/018/1501853.pdf

[255] MiFID 2004/39/EC, exception to the client assets protection.

redemption shall be circumvented based upon this purpose.[256] The reason is that the collateral giver could pay less in the transaction if it permits the collateral taker to repledge the collateral.

The legal result of the rehypothecation or reuse is that the collateral giver has a personal claim against the collateral taker to return the collateral when the relevant financial obligation was performed. The Art 5.2 of 2002/47/EC confirmed that right and included two ways of performance:

> The collateral taker shall, on the due date for the performance of the relevant financial obligations, either transfer equivalent collateral, or if and to the extent that the terms of a security financial collateral arrangement so provide, set off the value of the equivalent collateral against or apply it in discharge of the relevant financial obligation.

Theoretically, it is fair to use the equivalent collateral or cash to realize the claim of the collateral giver, because the high liquid assets are easily replaceable and they are used to guarantee the money claim of the counterparty rather than a specific claim. It is not an issue to return the equivalent collateral if the collateral taker is solvent. However, if the collateral taker is in bankruptcy and the assets with the right of hypothecation is not subject to client assets protection, the collateral giver has unsecured claim and will be shared the remaining assets pro rata with all other general creditors.[257]

The bankruptcy of Lehman Brother is a typical example, albeit this issue arises from the traditional prime –broker arrangement before setting up the new post-crisis financial regulation framework. There exist loopholes in the client asset protection regime in different countries. Assumed that the collateral arrangement as a part of master agreement is subject to UK law or US law. In the US Securities Exchange Law 1934 15c3-3, Prime broker can not use the collateral /asset to raise more money than the amount they lend to their customers.[258]

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[256] Gerad, McCormack, Secured credit under English and American Law, 1st ed .2004, Cambridge University Press, at p.272; Louise Gullifer, What should we do about financial collateral, at p.19.
[257]ISDA, Collateral Law Reform Group, p.7
[258] Appendix11, Key SEC Financial Responsibility Rules, p.137
https://www.sec.gov/about/offices/oia/oia_market/key_rules.pdf

Whereas, in European countries such as the UK there is no such a restriction and the clients are incline to permit their assets to be transferred from the US to the UK. This is what happens in the Lehman case, Lehman Brothers International Europe (LBIE), a UK subsidiary of Lehman Brothers Holdings Inc., failed to comply with the principles of the protection of client money. In this case, the Supreme Court adopted a broad interpretation of the client money and the distributions rules; as a result, all the clients both segregated or those with a contractual right to segregate (unsegregated client in reality) are equal, on the condition that the financial intermediary is insolvent.[259] However, the collateral which associated with the financial transaction (MiFID business) will not be deemed as client money and the collateral giver can not get rapid payment from the client money pool.[260] As mentioned above, the collateral with rehypothecation as an exception is not under the protection of client asset regime and the theory of segregation could not apply to the case of collateral. The Supreme Court's decision expands the range of client money pool and conversely reduces the residue assets that will be distributed between unsecured creditors. After the fulfillment of financial obligations, the clients as collateral givers afford the risk that they may not get the equivalent asset.

After the bankruptcy of Lehman, rehypothecation declined significantly, and prime brokers have been demanding more cash collateral or hold the assets in a custody account.[261] In the custody account, the collateral giver will not lose its title to the asset, and the collateral taker may not be allowed to register its asset with the same name as the safe custody assets they hold for clients.[262] Indeed the hold of the title will restrict rehypothecation for the aiming of better investor protection. This way makes more cost as well. Since the broker shall put the asset into custody and make no use of it, the custodian fee and the more service fee of a transaction will be finally afforded by the client.

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[259] United Kingdom Supreme Court, Lehman Brothers International (Europe), Re 2012 UKSC 6, para 139-160

[260] FCA Handbook, CASS 3

[261] Singh, M., 2010. "Under-collateralisation and rehypothecation in the OTC derivatives markets," Financial Stability Review, Banque de France, issue 14, pages 113-119, July, at p.116

[262] Fiancial Conduct Authority (FCA), PS 14/9: Review of the client assets regime for investment business, june 2014, Q 35 5.4, at. p 32. https://www.fca.org.uk/publication/policy/ps14-09.pdf

After the financial crisis, the EMIR Art 39 requires that the separate records and accounts shall apply between CCP and CMs, CMs and clients, and between different clients. In this case, the clearing member is to ensure the collateral posted will be sent directly to CCP without rehypothecation. There are also similar regulations in US Dodd-Frank Act.[263] However, the separate records or accounts do not mean that CCP will hold the collateral asset of client absolutely. CCP will offer different levels of customer protection and only the client who chooses the individual segregation account will be under the protection of individual asset segregation. The different level of protection and customer account will be described later. These new regulations imply that some clients will not choose the completely segregation way, as a result, CCP will not segregate the asset of these clients and just hold eligible asset covering initial margin for all positions. If CCP liquidates the contract of CM engaged whatever in proprietary business or in agent business, the liability of CM will be discharged through the margin held by CCP. On the condition that margin posted by client are rehypothecated or reused by CM and there is margin transformation between the margin posted by CM to CCP and client to CM, clients are still exposed to the risk that they could not get the equivalent collateral based upon personal claim. Otherwise, the Art 39 permits CCP to use the margin collected via security financial collateral arrangement. [264] This provision aims at the using of initial margin, since cash as variation margin will be used to meet the short-term obligation rapidly. Many financial market participants worried that the fail of risk management by CCP would cause the client who will expose to the double default of the CCP and the CM.

4. The summary of margin requirement under CCP clearing

From the above analysis can be seen that CCP will restrict the use of collateral from two aspects: 1) In the bilateral transaction, the initial margin posted by the buy-side client to the sell-side broker is unilateral, so the sell-side one could use

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[263] TitleVII Section 724 (a) Dodd-Frank Act
[264] 648/2012 EU regulations Art 39.8

the collateral based on agreement and make effective collateral management. While under the compulsory clearing requirement, the executive contract was replaced, and the CM for its own business or as an agent should post a large amount of high liquid collateral to satisfy CCP margin requirement. These margin held by CCP can only be rehypothecated with limitation.2) some clients can choose higher protection that segregates their collateral individually. According to segregation rule, the rehypothecation of these collaterals is impossible. Otherwise, there is an interaction between the collateral transformation and collateral use like rehypothecation: CMs want to attract more clients and promise to make the collateral transformation to meet the high margin requirement of CCP. The cost of clients to post relative low liquidity asset is that CM will be granted the right to use collateral. For instance, in the repo or securities lending market, the buyer will not accept an encumbered asset, because the security title will be transferred from seller to buyer. The result is that more margin transformation CMs made, more margin they have the right to use. This result will impair the effect of segregation rule. Certainly the providing of high-level protection has positive sides. However, the collateral receiver as broker traditionally has a monopoly role in the market and he can refuse any transaction if the buy-side client does not agree to the rehypothecation of collateral. But now the clients could choose the higher protection way with more cost. All in all, there is no one size fits all situation and the clients shall analyze costs and benefits of the transaction then make their decision.

Section B. The client protection under the regime of CCP

I. the real risk faced by investor in the derivative contract

To explain the specific risk encountered by clients in the derivative transaction, it will start from the introduction of different roles of financial intermediaries in the market. And how to deal with collateral depends to some extent on the different function of financial intermediaries. Even though in the CCP clearing agreement, CM and CCP replace the role of brokers, the explanation of the

relationship between investment intermediaries (like brokers) with clients can help to understand the new Client clearing framework.

In Staikouras article analyzing the theory of financial intermediaries, Banks and Investment intermediaries are engaged in different business. The traditional business of bank is as receiver of short-term deposits from clients and the providing of long-term loans to institutions.[265] This business is based on the deposits provided by clients and banks will reasonably hold the client asset as collateral. The main risks existed in bank system are credit risk that the credit loss is larger than the loan loss reserves, and the liquidity risk is that the bank can not meet an unexpected short-term financial demands. Therefore, the risk management of supervision focuses on the capital requirement such as the ratio of the reserve requirement.

The traditional function of investment intermediary is to find the opportunity to make the financial contract. It will execute client's order to purchase or sale of financial instruments.[266] In the securities market, clients deposit their money in broker's account based on the agency relationship. The seller and the buyer have the proprietary right to the asset. In an ideal situation, there is no mismatch issue if all orders are properly matched. Whereas how much collateral shall be posted for the derivative transaction is due to the change of the market value of the underlying asset. Even though the market value will be in short time adjusted and more accurate, the market risk is still a main risk for the investment intermediary. The use of client's asset will further aggravate this risk. Setting up the public confidence of financial market is the aim of investor protection because customers will presume that the assets posted by them are safe under the control of investment intermediary. However, if the fact is that they will expose to the high risk of loss of their asset as a result of fraud, carelessness, and the bankruptcy of investment firms, customers may determine not to participate

[265] Panagiotis K. Staikouras, A novel reasoning of the UK Supreme Court decision in Lehman Brothers: the MiFID segregation rule from the angle of financial intermediation and regulation theory, 2014 2 Journal of Business Law 97, at p.105

[266] Panagiotis K. Staikouras, p. 107

in the market.[267] The loss of confidence results in an acute shortage of liquidity in the market while the recovery of confidence needs much longer time.

According to the report of IOSCO, the most obvious risk of customer is the firm unable to return client asset because of its insolvency.[268] Furthermore, the collateral posted by the right of use is even not subject to "client asset". Therefore, there are some flaws in the protection of client asset and the protection of collateral posted with derivative contract is weak. The rationale of an expanding investor protection is that the assets of investors shall be used to fulfill its own obligation rather than finance the proprietary trading of investment intermediaries. The line between the client assets and investment firms' own assets need to clear so that the segregation rule is the key element to protect the client asset.

Another issue posted here is that if large part the clients of intermediary are hedge funds[269], should the asset of these clients be protected? Hedge funds use more derivative contract to achieve their investment goal than mutual fund does. They use prime brokerage service of large investment bank to execute, clear or settlement their trades. It is evident that hedge funds are sophisticated professionals and their limited target customers are also institutions or accredited wealthy client. As a result, these funds are traditionally exempt from some of the regulations aiming to protect investors. Whereas in recent years, hedge funds are becoming more and more popular as investor's choice, there are more market participants directly or indirectly related to hedge funds. A term "retailization of hedge fund" appeared in SEC testimony.[270] The fund of hedge fund (FOHF) is a typical example. The underlying assets of this fund are shares of different hedge funds. The offering of FOHF is another way to increase the availability of hedge funds to public investors. From this aspect, hedge fund is not limited to the access of accredited investors. Otherwise, even the hedge fund

[267] IOSCO Technical Committee Report, client asset protection August 1996, at p.7 https://www.iosco.org/library/pubdocs/pdf/IOSCOPD57.pdf
[268] IOSCO, p.7,8
[269] SEC Investor Bulletin, Hedge fund, Hedge funds pool investors' money and invest the money in an effort to make positve return. Many hedge funds seek to profit in all kinds of market by using leverage. https://www.sec.gov/investor/alerts/ib_hedgefunds.pdf
[270] Testimony concerning, Investor Protection Implications of Hedge Funds. William H. Donaldson, april 10, 2003, https://www.sec.gov/news/testimony/041003tswhd.htm

has the incentive to allow investment intermediary to use the collateral posted to get a lower service fee, these hedge funds still think the terms are favorable to them and consider the broker as a clearing facility or a central custodian of all customer's assets.[271] Based upon the analysis above, the assets of hedge funds which use derivative contract shall be protected as well.

The real risk encountered by investor of derivative contract arises from two aspects: 1) the use of collateral deprives investor's proprietary right to the asset. the legal results of this act is not recognized clearly by the investor and makes the investor outside the scope of segregation protection which is a prime rule to prevent the abusive use of client asset. 2) The market risk faced by investment intermediary will finally shift to their investors. In one aspect, issuing short-term bond and using repurchase agreement will supply fund to these intermediaries; in another aspect, the increasing debt amount will more likely lead to the liquidity risk. Since these institutions does not have enough cash cushion and special support from government like the bank, the probability of their bankruptcy is high and the investors face the risk that insolvent institution can not meet its obligation.

One distinct characteristic under CCP clearing is that many CMs faced to investors are investment banks.[272] Even though investment banks are also engaging brokerage service but they are subject to higher capital requirement. The usual investment intermediary is subject to net capital cushions[273] rather than Basel capital regime. From this aspect, the threshold to be a CM is higher than to be the Securities Incorporation. These banks can also provide better risk management and have connection with other members facilitating the conclusion of the contract. The higher capital requirement can better reduce market risk and the danger of the bankruptcy of intermediaries. Otherwise, even though Basel committee imposes requirements on exposures to CCPs, unlike the

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[271] Testimony concerning, Investor Protection Implications of Hedge Funds.

[272] List of clearing members in Category 1 for the purpose of the clearing obligation under EMIR. This list of CM includes BNP Paribas, Barclays Bank, Citibank, Commerzbank AG, Credit Suisse AG, HSBC and JP morgan Chase Bank, etc.

[273] US Securities Exchange Act of 1934 Rule 15c 3-1

US rules that obeys the Basel requirement, the EU legislation in Art 382 .3 CRR regulated:

transactions with a qualifying central counterparty and a client's transaction with a clearing member are excluded from the bank's funds requirements for CVA risk.[274]

It means that the exempted intermediaries do not need to hold additional funds based on CVA risk arising from OTC derivatives. This regulation on one side stimulates the wider use of CCP, on the other side reduces the capital held by these intermediaries as CMs who engage in cleared derivative transaction. It may increase the default risk of CM if the bank can not find an optimal way to make a balance between capital relief and client protection.

II.the legal arrangement for posting margin and the legal result of failure

Two types of agreement are usually used to post margin: one is title transfer financial collateral agreement (TTFCA) and another is security financial collateral agreement (SFCA). According to the title transfer agreement, the collateral giver will transfer legal and beneficial ownership in financial collateral to a collateral taker. This arrangement is widely used in repurchase agreement, security lending agreement or credit support arrangement， because it favors the collateral taker freely to use collateral posted as it were the owner of asset. Whereas in the security financial agreement, the collateral giver retains the ownership and provides the collateral by way of security, the collateral taker only has the security interest. In the English law, even though the collateral provider will hold the ownership, this financial collateral shall be delivered or registered to satisfy the criteria that collateral taker possesses or controls these collaterals.[275] This arrangement is not apply to the floating charge[276] because the

[274] EBA Report, on credit valuation adjustment under Article 456 (2) of Regulation (EU) No 575/2013 (CRR), 25 Feb 2015.CVA or unilateral CVA is usually understood as the price of counterparty credit risk that firms are required to reflect in the price of their derivative transactions. It reflects the best estimate of the potential loss incurred on derivative transactions.
[275] The Financial Collateral Arrangements (No.2) Regulations 2003, Intepretation 3, "security financial collateral arrangement" (c), http://www.legislation.gov.uk/uksi/2003/3226/regulation/3/made
[276] This means may be reflected by para 2 (b) the ISDA-CSD (credit support deed) "each party as the chargor, as security for the performance of the obligation: mortgages, charges and

collateral provider only has the right to substitute the collateral or withdraw the excess of collateral.[277] In addition, any right of the collateral provider to substitute financial collateral of the same or greater value.....shall not prevent the financial collateral being in the possession or under the control of the collateral taker.[278] In the civil law jurisdiction like Germany, securities as collateral are treated in a similar way. With the transformation of financial collateral directive into German Securities Deposit Act, the record has legal effect to the validity of security interest. However, the control of securities by collateral taker is not exactly prescribed.

Since different rules may apply to the issue of security collateral agreement, market participants tend to use title transfer agreement to achieve their aim, and they can get maximum protection on the condition that the collateral giver is in bankruptcy. However, if the collateral giver transfers the asset or grants the right of use, the failure of collateral taker will present additional risk to a collateral provider. The example of rehypothecation failure is illustrated in the Lehman Brother case, the legal remedies granted to the pledgor in normal case shall be analyzed here.

Firstly, the collateral giver does not have any remedy against the third party to whom the collateral posted was transferred.[279] As above said, the third party of repurchase agreement typically requires its counterparty to hold the full title to the collateral. If the collateral giver grants the title or right of use to the collateral taker, it has subordinated its right to that of the third party. The same is that the collateral taker is also subject to the third party rights since it posts collateral to secure its debt. If it is insolvent, the third party can retain the asset or implement its right of appropriation to the collateral posted by collateral taker. It means

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pledges......with full title agreement, in favour of the secured party by way of first fixed legal mortage."

[277] 2002/47/EC derivatives Art 8.3 (b)

[278] The Financial Collateral Arrangements (No.2) Regulations 2003, Intepretation 3, "security financial collateral arrangement" (c)

[279] In re Lehman Brothers Holdings Inc, 526 B.R.481 (S.D.N.Y. 2014), Discussion I.B (2) "any permitted sale of the collateral is free of First Bank's interest..."

that the rights of collateral givers and of collateral takers are all subject to the third party.

The collateral giver's claim to collateral taker is only based on contract.[280] The secured party is also subject to the contract right to return the collateral. As to the financial collateral, only the equitable collateral is required. First, the collateral giver could take action for contractual damage against the collateral taker. The problem is that, even the giver could sue for the equitable amount, he could not get the equitable amount actually. Since the debt is not secured by collateral, the collateral provider as an unsecured creditor is entitled to compensate from remaining assets of bankruptcy institution with other general creditors.

However, the set-off right entitled to collateral provider may equal to a secured debt given by the collateral taker. If the collateral giver has yet undue obligation to the collateral taker in the derivative transaction, it could set off its obligation against the amount of collateral posted by it. On the close-out netting condition, the party who is solvent could rapidly get the payment and is not subject to the insolvency process which is also applicable to the set-off. This part is also mentioned in the last chapter. Since many clients are also institutional investors, the rapid payment to them is also significant as its effect to the CCP aforementioned.

Under the CCP clearing, CCP interposes between the bilateral relationship and is the collateral taker of all counterparties. The default risk faced by client collateral giver is reduced, because all CM shall represent their client post enough margin to guarantee the derivative transaction. There is slightly possible that the CM use the margin posted by client to fund its own business and can not return equitable collateral when CM is insolvent. Since the margin are used to secure the relevant derivative transaction, CCP will use the margin to meet the obligation owed to non-default counterparty. However, the client clearing

[280]In re Lehman Brothers Holdings Inc, 526 B.R.481 (S.D.N.Y. 2014).“The collateral became outright property of Lehman Brokerage and First Bank retained only contractual rights against its own counterparty. ”

contract entered into between the CM and client, which reflects the relationship between CM and CCP, restricts the contract rights former entitled to client--- The client can not liquidate and net the contract as it can be based on original bilateral contract. This rule favors the client who owed obligation to CCP, and CCP system can secure client's margin or the equivalent amount of margin posted by CM which are used to pay the counterparty. Whereas clients who get profits from the derivative contract or pay extra margin are at a disadvantage, since CCP will net the contract and return the remaining margin back to CM, and the client can not assert set-off right against CM. Clients are still exposed to the default risk and can not get equivalent collateral unless their identity can be traceable.

III. could CCP better protect the investor?

Even though there is still risk existed in the CCP clearing system, why regulators choose CCP rather than brokers or dealers to manage risk?

1. CCP as a self- regulation organization

Exchange and Clearing house are recognized as self–regulation organization (SRO) in the financial market. The characteristic of clearing house as a SRO is that its operating rules apply to the access and use of service rather than regulate the participant's conduct directly as Exchanges. CCP can be seen as SRO because it provides essential market infrastructure service. One reason for the development of SRO is that the transaction cost is very high. Financial participants shall not only monitor the price trend and gather information affecting price, but also need a central trading platform to match, clear and settle transactions quickly. To reduce the cost, the market participants organize these SROs to promote their output. Another reason is that exchanges or clearing house represents the collaborative interests. These institutions do not hold private incentive to take aggressive risk and impair the benefit of investors.

The IOSCO SRO Consultative Committee manifests this point that "the broad objectives of SRO are the same as those identified for government regulation of financial markets....to preserve market integrity...to preserve financial integrity and to protect investors." [281] To achieve this goal, it presumed that SROs set up operation standards, implement and enforce the rules align with the financial regulation, and that the members in SRO put regulatory standards in the first place.[282]

The mandatory clearing requirement transplants the self-regulation framework of securities and future market to the OTC derivative markets. In the OTC market, the lack of unified trade and clearing platform results in the highly concentration of OTC derivative market, because only the big investment banks can afford the high transaction costs and act as the derivative dealer. [283] Those big dealers have incentives to cover the cost and make the high profit from the transaction to which they engaged. The different status of contract parties and the purpose of making the profit of large dealer prompt big market participants to increase risk and more likely to default to the counterparty. The relationship between financial crisis and the widespread use of derivatives is described in chapter 1. However, CCP is a neutral in the financial market which is used to minimize the counterparty credit risk. CCP does not hold the motive to get profits from the transaction between counterparties but rather to substitute one counterparty for meeting the obligation. In line with the new financial regulation in US and EU, CCP is introduced as a SRO to achieve the market efficiency and customer protection.

As a neutral in the financial market, CCP is as one party of every transaction and theoretically the trading platform zero out all trader's positions by the process of marking to market. Since the marking to market process is frequent, the participants will clearly know their account situation and the dispute over

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[281] MODEL FOR EFFECTIVE REGULATION, Report of the SRO Consultative Committee of the IOSCO, May 2000, p. 2

[282] Kristin N Johnson, Governing financial markets, regulating conflicts, March 2013, 88 Wash. L.Rev. 185, page 203

[283] *Id.* page 214

margin post or about the value of contract is less likely to happen here. As noted above, except the default of one counterparty, CCP will always keep the zero-sum net position. Whereas in the OTC market, the value change of underlying asset is not unveil because of the information asymmetric existed between contract markets. One party always sue the privileged party engaging in fraud or misappropriating the securities or money of their customers. Otherwise, the mismatch risk is still existed since the dealer is hard to find an exact opposite match for a swap that has already been taken. But the CCP can minimize this mismatch problem.

2. Does CCP need that much collateral?

One prevalent thinking in the market is that CCPs' margin requirement will increase the high-quality margin demand.[284] CM, who affords more trading costs under CCP clearing, will finally transfer costs to their clients. Even though the rate of default risk decreases, the higher trading cost will lower the liquidity of market.[285] If there are no enough participants in the market, it has harmful effects to the marking to market price of a transaction.

Firstly it shall be considered that whether the collateral demand will excess the collateral supply in the market. Some data analysis show that even though there is no explicit evidence about the scarcity of the supply of collateral, but in the near future, more new collateral will be demanded than supplied. However, the composition of data shows that large percentage of collateral are used to secure the repo transaction, and huge demand is also generated because of the new Basel III capital requirements.[286] As above-mentioned, the OTC derivative market has close relationship with repo market. The margin transformation needs vivid repo markets, because clearing member will use more collateral posted by client to engage in repurchase agreement so as to get the assets

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[284] Basel Committee on Banking Supervision, Margin requirements for non-centrally cleared derivatives, 18 March 2015, at p.3, https://www.bis.org/bcbs/publ/d317.htm

[285] Id, at p.3

[286] Is Collateral becoming scace? A study from the Netherland Bank, DNB Occasional Studies, Vol.10/No.1 (2012), Page 47 In late 2010 Euro banks needed 2.2 trillion for the private repo market and some 0.1 trillion to collateralize OTC derivatives.

accepted by CCP. So the new regulation of CCP clearing has some effects on the higher collateral demand.

Whereas based on the working paper of ECB in which an analysis investigates the effect on collateral demand of client clearing, the client clearing may lower but not raise system-wide collateral demand, if there is no proliferation of CCP. The explanation is that even though the client's position will be highly collateralized under CCP clearing, the customer can get benefits because of netting and diversification, when its trades with several counterparties can be netted through one CM. This rationale can also apply to the collateral posted by CM. Furthermore, the analysis points out that whether the netting and diversification are enough to offset the impact of increased initial collateral heavily depends on the value of clearing threshold.[287] It means that if a client trades few CDS contracts with a small amount of counterparty, the netting benefits gained by this client can not offset the effect of higher collateral demand. This result also provides evidence that non-financial counterparties should be exempted from the CCP clearing, because it uses few derivative contracts to hedge the business risk and will not find another transaction to offset the risk.[288] Therefore, CCP is more suitable for institutional investor and its effect on collateral demand is subject to certain circumstances.

From the above reason, we could see that CCP indeed makes a higher level of risk management. One reason to believe that CCP could make better management is based on the assumption that the goal of CCP is aligned with that of legislations and regulations; although the reality is that the business organization of CCP as SRO may in certain circumstances have conflict with the aim of regulators. These conflicts will be illustrated in the next chapter. Otherwise, this part explained the inverse relationship between collateral demand and the level of netting; however, the legal segregation rule will reduce the positive effect of netting because of the legal protection of client asset. The application of segregation rule and the maintaining of netting benefits shall be concerned in the CCP clearing

[287] Central clearing and collateral demand, ECB working paper series, No 1638/Feb 2014,Page 36
[288] ECB's response on EC's consultation on the review of EMIR, 02, Sep 2015page 5,6.

regime through which can achieve the market efficiency and better investor protection.

IV. Segregation rule and the account structure of CCP

1. Individually segregated Clients Accounts and Omnibus segregated Client Accounts

Before introducing different types of accounts protection by CCP, it should be emphasized that the trace of clients' assets is complex in normal. Even though the broker holds the records of clients' assets, but these records can not be assured actually to reflect the exact amount of the assets. Lehman Brother case showed that the broker may violate its duty as a custodian to hold clients' assets appropriately. Furthermore, the amount of all clients' asset will be reduced because of the violation of duty of broker. A ideal situation is an ex ante segregation of client assets given as collateral rather than prove the assets are owned by clients. CCP can achieve this aim to some extent, and the protection provided by CCP will depend on the choice of clients. The client protection models of CCP in UK as a typical example within the context of EU client asset regime shall be analyzed in the next sections in comparison with US model.

Under the CCP clearing regime in EU, the CM's house account shall be distinguished from the accounts of client.[289] In this situation, clients do not expose to the risk arising from the proprietary transactions of the clearing members.[290] Additionally, Art 39 EMIR requires that CCPs offer at least two types of segregation which are omnibus client segregation (OSA) and individual client segregation (ISA). The omnibus account at a CCP will contain money in relation to two or more clients of a firm; conversely, individual client account will only hold money for one client.[291] the different of these two types is not only about the quantity amount of clients in an account, whereas it is about that the assets covering position in one account can not be used to cover the loss in another

[289] Art 39 (2) EMIR
[290] Eurex clearing report, Disclosure pursuant to Article 39 (7) EMIR, Art 2.1 30 January, 2015
[291] EMIR Art 39 (2) (3)

account. In the omnibus account, the non-default client is exposed to the risk to take the loss of the default client because they use the same account.[292] The problem is avoided in the individual segregation because each person has an account and the asset within the account will only be used to cover its own position.[293]

The rationale of client margin segregation is transplanted from securities market. An example of English law is that:

> an investment firm receives money from or holds money for, or on behalf of a client in the course of or in connection with MiFID business and /or investment business, the client money rule will apply to that investment firm and the firm will receive or hold that money as trustee.[294]

If CM is a trustee, the margin is subject to the client assets, then the difference between individual account or omnibus account is that the asset in omnibus account is co-ownered by all the investors. The investors have right in rem to the assets. The customer protection in the US through account segregation is also prescribed in the CEA 4d(a)(2) and in the CFTC rules.[295]

However, if clients transferred their assets as margin to CM based on TTFC, these assets are exempt from the clients' assets.[296] As above said, collateral rehypothecation is made through TTFC and the client's legal claim results from TTFC is a general credit claim. The CCP also has the right to rehypothecate the margin but provides additional protection to the assets whether or not owned by the clients. Firstly, the positions and assets of client are identifiable based on the record of CCP. The information held in CCP system is more transparency than

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[292] LCH, Collateral Account Segregation, Holding and processing collateral with LCH, at p.23"The OSA allow clearing services …to be offset against an omnibus pool of assets held within the collateral account"; https://www.lch.com/system/files/media_root/collateral-account-segregation-july-2016-final-version.pdf

[293] *Id.* at p. 23 "The ISA allows clearing services to provide individual client level liabilities to be offset against assets held for the same individual client only within the account."

[294] FSA, PS 12/13, client assets regime: changes following EMIR, at p.12 " a firm enters into certain deriveatives transactions for a client and it hold margin money for or on behalf of its client in connection with those transactions, the firm will need to treat that money as client money under CASS 7."

[295] Section 4d(a)(2) CEA; 17 CFR 1.20

[296] CASS 7.2.3 FCA Handbook

that just held in intermediaries' account[297]; Second, the clients' accounts at the level of CCP, whether omnibus or individual, are margined by CM's money even though clients provide their assets to CM based on TTFC agreement.

In this case, whether margin provided by client is subject to client assets may be based on the types of collateral and the different legal character of the transfer agreement between the clients and the clearing members. However, from the CCP perspective, if the CM is default, the margin posted by CM (A) will be ported to another CM (B) or net against each other to create a different claim between CCP and CM. Since the margin posted by CM is in relation to client's transaction, the differences between omnibus client account and individual client account are: (1) whether the margin used to secure client's transaction could be ported; (2) if transactions can not be ported, how to allocate the residue assets based upon different claims between CM and CCP.

Porting is prescribed in Art .48 (5) and (6) EMIR "where assets and positions are recorded in the records and accounts of CCP as being held for the account of a defaulting clearing member's clients in accordance with Art 39(2) (omnibus account) and Art 39 (3) (Individual account), the CCP shall transfer the assets and positions held by defaulting clearing member for the account of its clients to another clearing member designated by all of those clients, on their request and without the consent of the defaulting clearing member". In the Art 305 (2) (b) CRR, it is emphasized that the client's position and the collateral shall be transferred at market value. Porting is in accordance with the best interests of clients because many derivative contracts are in long-term for hedging and parties want to continue these transactions. Theoretically, the porting could be achieved either in the omnibus account or in the individual account, but there are some preconditions to meet that way.

There are two legal preconditions of porting: one is whether the porting is enforceable in the relevant jurisdiction, because the insolvency administrator

[297] Sometimes financial intermediaries will violate the fiduciary duty or because of convinence to put client's money on their own accounts.

will challenge that the assets are taken away from the insolvent clearing member via porting.[298]; another is that another CM has contract with clients to assume the defaulting CM's margin and positions. However whether the two types of accounts could be ported is a reality issue. In the individual client accounts, all the positions and assets in that accounts are identifiable through the records of CCP.[299] Only the assets in relation to that individual client's transactions can be netted. Furthermore, the excess margin posted by the individual client will be held by CCP rather than CM. [300] As a result, based on the transfer agreement between client and another CM, the identifiable assets are easy to be transferred to another CM, and there are enough assets in the account to cover the client's position. Whereas in the omnibus client accounts, the assets and position related to clients are hard to identify, because all the positions are putted in one account and the assets are netted between different clients.[301] There is only one net amount recorded in the omnibus account. The account porting is difficult because all the assets and positions are as a unit and could not be transferred individually. If the transfer wants to be success, all the clients in the omnibus accounts shall agree to use the same CM. However, a solvent CM is hard to accept the whole amount.[302] If some clients in OSA have transfer agreements with other CMs and some are not, there may be no sufficient assets to cover the positions of clients who have agreements because the assets was provided on net base. [303]

If the porting is not achieved, CCP will terminate all the contracts with CM in relation to client's position and close-out calculate the different amount between

[298] EMIR has a binding effect to the EU countries, one example of the German law is 102b §1 (1) 2 EGInsO which gives the priority to EU regulation confirming the way of porting. In the US , 17 CFR 190.02(a) (2) prescribes the transfer under section 764(b) of the US Bankruptcy Code. The transfer shall be approved by the CFTC, therefore the porting is not automatically.
[299] Art 39 (3) EMIR
[300] Art. 39 (6) EMIR "when a client opts for individual client segregation, any margin in excess of the Client's requirement shall also be posted to CCP ...and shall not be exposed to losses connected to positions recorded in another account.
[301] Art 39 (2) EMIR
[302] Deutsche Bank, EMIR Article 39(7) Clearing Member Disclosure Document, September 2016, page 6; https://www.db.com/company/en/media/Deutsche-Bank-EMIR-Clearing-Member-Risk-Disclosure-Document.pdf (Deutsche Bank, 2017)
[303] Louise Gullifer, 'Compulsory Central Clearing of OTC Derivatives: The changing Face of Provision of Collateral' in Louise Gullifer and Stefan Vogenauer (eds), English and European Perspectives in Contract and Commercial Law, 2014 Page 393

CCP and CM.[304] It could be seen that the protection of CCP's right is important, because only based upon the close-out netting provision CCP could rapidly use the margin provided by CM to cover the loss of clients. If the clients' position is in profit or there are excess assets in the accounts, these assets will be return back from CCP directly to clients.[305] The clients who choose ISA will get better protection. Since all the different claims between CCP and CM is in relation to their own accounts and the CCP could identify the client, the excess amount is able to directly return to clients.[306] Whereas the clients who choose OSA are hard to be identified, because their collateral was called on the net basis.[307] In this case, The difference claim between CCP and CM through netting is in relation to all clients in the one omnibus account. CCP can just return the assets to CM rather than individual clients, because there is no individual records at the level of CCP.[308]

The net OSA provides minimum protection to the clients. In the EMIR review report, two types of OSAs as additional choices to the EMIR segregation models have been offered to clients. One is the introduced net OSAs; another is called OSA gross solution.[309] The difference between the net base and the gross base is that there will be no netting of exposures between different clients based upon gross base.[310] The risk of omnibus segregation will be reduced by OSA gross base, because even a client's assets will be used to cover another client's loss, there will be more collateral in the pool. If enough assets in relation to all clients are posted in the OSA, there will be more possible to cover all clients' positions.

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304 Art 39 (6) EMIR; *Id.* Deutsche Bank Disclosure Document, page 6

305 *Id.* page 7

306 EMIR Review Report no.3: Review on the segregation and portability requirements, 13 August 2015 ESMA/2015/1253, para 54; ESMA emphasizes the superiority of an EU regulation over national laws. In its report which takes an opposite attitude to the document written by CM such as Deutsche Bank, the client of individual segregation account "must be known and the direct return of asset after liquidation always possible."

307 *Id.* Deutsche Bank Disclosure Document, page 21 ; In this case, the clients in OSA are expose to fellow client risk, becaus the asset owed to some clients will be used to cover the loss of the other.

308 *Id.* page 21, the clients will suffer liquidation risk unless the CCP can transfer the assets directly to the individual client.

309 *Id.*EMIR Review Report, ESMA/2015/1253, para 19, 20

310 These segregation accounts are provided by different CCPs, See 3.7 ICE Clear Europe Customer Protection Framework, April 2015 https://www.theice.com/publicdocs/clear_europe/Customer_Protection_Framework.pdf

As above mentioned, these protection processes are implemented at the level of CCP. Traditionally, the assets posted by clients through TTFCA will not be protected. Now CMs use its margin to secure the transaction of clients. CCPs' porting and close out netting can protect clients more efficiently because the traditional way to seek remedy for client's margin is subject to the insolvency process and these assets are not under the protection of clients assets because of the transfer agreement or with the right of use. Furthermore, some assets could be provided as pledge through which a client will not lose its proprietary right. Different agreements will be used depending on the types of collateral assets. The legal effect of new EMIR protection shall be analysis in combination with two typical types of assets.

2. The transfer of cash beyond the protection of the client assets

Cash collateral can be provided as variation margin and initial margin. Since cash is harder to segregate than securities[311], this type of asset will be more likely to use as the variation margin.[312] Another reason is that if the cash posted by a client as VM is transferred to the CCP by title transfer, CCP will be free to deal with the asset as it is the owner. Therefore, the cash collateral provided under the title transfer agreement is not subject to client assets protection prescribed in UK FCA rules.[313] As mentioned above, the title transfer is also acknowledged by the civil law countries in the EU through the implementation of Financial Collateral Regulation. Based on the contract relationship, the CM has the personal claim to CCP for the payment, and the client also has the same claim based on its contract with CM.

[311] Regulation (EU) 2016/2251, Recitle 29

[312] The margin management of clearinghouse, such as Eurex, require the variation margin must be cash. This requirement allows the CCP to transfer the cash direct to the non-default party without legal risk and to avoid the liquidity risk during the market stress. http://www.eurexclearing.com/clearing-en/risk-management/margining-process

[313] CASS 7.11.1 (1); recital 27 to MiFID

The legal character of the cash collateral under the TTCA decides that the protection of client collateral is not based upon the rationale of segregation.[314] The cash posted by clients will neither separated at the bank account of clearing members nor that account of the CCP. It is in appearance as part of the cash in the CM's account credited to the bank account of the CCP.[315] Even though there is no physical segregation of the client's cash collateral, the individual segregation account can better avoid the insolvent risk of the CM through the individual record and calculation at the CCP. Louise Gullifer illustrates the difference between the cash collateral in the individual client account and in the omnibus account.[316] The CCP only needs separate its own cash and the cash provided by CM as margin when it deposits the cash with a third party (the CCP's bank account).[317] From the above analysis, the EMIR protection will apply to the cash collateral that are not subject to client asset.

The cash collateral protection depends on the smooth operation of the CCP. The Eurex clearing, taken as an example here, provides actual asset segregation rather than the value based segregation.[318] The client's position in relation to the CCP transaction will be pre funded by the cash collateral in the proprietary account of CM to perform the obligation.[319] After the clients of ISA deposit extra collateral and the CCP calculates the account, the CM can apply for a withdrawl of cash which is equivalent to the shortfall of clients.[320] The CM is also obliged to

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[314] Art 122" the asset are passed to clearing member on a TTCA basis ...would no longer constitute asset held in custody ", Opinion Asset segregation and application of depositary delegation rules to CSDs, ESMA 34-45-277, 20 July 2017

[315] Jo Braithwaite and David Murphy, 3.2 Got to be certain: the legal framework for CCP default management processes, Financial Stability Paper No.37-May 2016, Bank of England, page 11

[316] Louise Gullifer, 'Compulsory Central Clearing of OTC Derivatives: The changing Face of Provision of Collateral' in Louise Gullifer and Stefan Vogenauer (eds), p 394, 395, It explains that , for Individual segregation client account, CCP will record clients separate assets in its record like " client A cash account". However, the account will not be a real separate account named as client A, the presumed "cash client A account" is a part of the debt shall be paid by CCP to CM.

[317] Art 47 (5) EMIR

[318] ESMA: Individual client segregation must identify specific assets, Eurex News, 09 Aug 2013 http://www.eurexclearing.com/clearing-en/about-us/news/ESMA--Individual-client-segregation--must-identify-specific-assets-/597804

[319] Circular 153/2013, Client Asset Protection, 18 Dec 2013, Eurex Clearing, p3

[320] *Id.* Circular 153/2013

transfer the collateral to the CCP based upon the requirement of individual segregation account agreement.[321]

Since VM will be rapidly used to pay the debt to another CM, the margin posted in the individual account by title transfer has little risk to the client. However the cash posted as VM in the omnibus account is exposed to more risk. The reason is as above mentioned that CCP is hard to port or know each client's position to return the residue assets. Under the EMIR article 48 (7), the residue asset will be returned to the clearing member for the account of its client. But the title transfer means that these residue assets are CM's insolvency assets and the clients have only personal claim to the CM without the protection as the owner of the residue assets.

If the cash was transferred as IM by security financial collateral arrangement (SFCA), CM grants security interest to CCP. If the clients have TTCA agreement with the CM, the legal result is same as the CMs had a TTCA agreement with the CCP. The clients could have a SFCA with the CMs without the right of use to ensure their proprietary right. The essential elements of a valid SFCA is mentioned before and is different between countries. In accordance with the FCD, the collateral as security is exempt from the registration requirement, if the provision of the agreement is in writing or in a legally equivalent manner and the collateral is in the "possession or controlled" by CCP.[322] The IM as cash posted by CM will be deposited in the account at the CCP level, as a result, there is no doubt that CCP possesses these margin. There is another question that whether CMs possess or control margin posted by the client. From the perspective of Louise Gullifer, the time of possession shall be the moment the collateral is posted to CM rather than always possession. One reason is that CM will lose the control of margin if it applies the right of use or put the transferred margin to CCP. [323] The

[321] Art 39(3), (6) EMIR
[322] Art 3, Recitle (9) 2002/47 EC
[323]Louise Gullifer, 'Compulsory Central Clearing of OTC Derivatives: The changing Face of Provision of Collateral' in Louise Gullifer and Stefan Vogenauer (eds), page 397

ruling of CJEU confirms this rationale.[324] The court held:" The Directive 2002/47 does not specify the circumstances in which the criterion requiring the collateral taker to be in possession or control of collateral is fulfilled in the case of intangible collateral.... "[325] but "the taker of collateral, such as the collateral...in the form of monies lodged in an ordinary bank account my be regarded as having acquired possession or control of the monies only if the collateral provider is prevented from disposing of them. "[326] According to the court's decision, even if the CM will use the collateral posted by clients, the SFCA between them is still in force because the client is not free to dispose the posted collateral.

As discussed above, the SFCA between the CMs and the clients is used to protect the clients' asset based upon client money trust. Based upon the principal-to-principal clearing model, the assets posted by CM are part of the clients money pool of the CCP, if it were insolvent. Traditionally, the experts will advise that the SFCA without the right of use is the safest way to protect the client money. But the EMIR regulation provides a statutory protection of the clients' money: CCP will more easily to port the transaction and relevant collateral for the clients who choose individual account. Before the implementation of EMIR, a CCP will return the residue cash to a CM if the CM defaults, and all the clients money will be pooled on the insolvency of the CM. However, in the regime of EMIR, the client money will be returned directly by the CCP to clients rather than stay in a client money pool of the CM regardless of whether there is a TTCA or SFCA agreement between the CMs and the clients.[327] The EMIR protection is a more effective and rapid way to get the assets back. One concern is that the statutory trust relationship between CCP and clients is hard to prove and their right to the cash collateral is uncertain if CCP is insolvent. Whereas for the omnibus accounts, since CCP will less likely to port the collateral and will return the residue cash to

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[324] Private Equity Insurance Group' SIA v 'Swedbank' AS, Case C-156/15, Judgment of the Court (Fourth Chamber) of 10 November 2016

[325] *Id*. para 38

[326] *Id.* para 44

[327] 2.7 Client Assets Regime: EMIR, multiple pools and the wider review, A response by the British Banking Association, it points out that the EMIR protection shall only apply to the cash asset within the protection of client money account, which means that the cash collateral based upon TTFA is not within the scope of EMIR 39. https://www.bba.org.uk/policy/capital-markets-infrastructure/client-assets/bba-cp1222-part-ii-iii-response/

CM, the cash in omnibus accounts will be seen as client money in a pool if the security interest relationship is set up between CM and clients. The client money protection regime will apply to these clients rather than EMIR way. In England, if the money is held under the model of gross omnibus account, FSA will treats the money held in this way similar to the money held in individual account.[328] The reason may that these assets are held by CM for the account of clients and the client's assets shall not be pooled if the owner could be identified in the regime of EMIR.

3. transfer of securities as the client assets

As indicated in the types of margin, securities are mainly used as initial margin and are transferred for granting the security interest to a collateral taker. The traditional way of thinking is that clients hold the ownership of securities. If the CM is in bankruptcy, these clients could get their security back. However, this is not the case here. Before explaining the relationship between CCP, CMs and clients, the role of a settlement institution called CSD as a third party (central securities depository) shall be described here. Whether in the common law countries or civil law countries, the disposal of securities may subject to the securities custody rule.[329] At the early time, the physical transfer of security is mainly used in the trade market and certificates could prove the ownership of securities. However, with the development of intermediated securities model, clearing members hold investors' securities as owner and put these securities centrally in their accounts of CSD. For the settlement of securities, each CM has its own accounts in the CSD. [330] However, there is no such a CSD for derivatives contracts, and CCP assumes the responsibility to administer the accounts of their CMs. CSD will still be used because CCP will deposit the collateral as securities in the CSD.[331] When CCP put CMs' margin in the CSD, it will use its name and there is no segregation of securities posted in relation to clients and clearing members. ESMA confirms this method that the accounts within CCP are no need to be

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328 FSA policy statement" Client asset regime: Changes Following EMIR (PS12/13, 2012)

329 English law, CASS custody rule, in Germany, Section 17a of the securities custody rule

330 All the Ins & Outs of CCPs, report of netherland bank, 1996, page 10

331 *Id.* page 11

reflected in separate accounts in the CSD or other securities settlement system.[332] Therefore, these securities posted to CCP are actually in an omnibus securities account.

Securities could be deposited under the name of CM in the CSD system. By this way, the accounts of different CM can be segregated in CSD system and the securities deposited in that accounts will not be exposed to other creditors of CCP unless they will be used to satisfy the secured claim owed to CCP. Take the Eurex as an example, the CM will open a securities account by its name with the Clearstream Banking AG,[333] which is the largest CSD in Germany. The CM surrenders its claim to CSD and grants the security interest to CCP on its CSD account and CCP can sell the pledged securities without notice legally.[334]

In the margin transformation part, it is known that the securities posted by clients may not be used as part or whole of margin posted by CMs to CCP. Otherwise, if the CMs execute the right of using the securities, the client will lose its title to the collateral. Actually in the common law country, the legal effect of transferring financial collateral by TTCA or SFCA has a rare difference here. Therefore, CM has a personal claim against CCP to get equivalent assets. In EMIR, CCP has the right to use the initial margin posted by SFCA[335], as a result, CCP can sell the securities for cash if a CM or a client defaults. The sell of securities are not in favour of clients, in this case, the clients could not get their original securities back, and the value change of these securities will not be paid.[336] Since the CM has no right to get the original securities based on its relationship with CCP.

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[332] ESMA, EMIR Review Report no.3, Review on the segregation and portability requirements, Aug 2015, page 8 section 37

[333] 2.1.1, Appendix 11 to the Clearing Conditions for Eurex Clearing AG, Pledge Agreement relating to pledges of Eligible Margin Assets in order to provide Basic Clearing Member Margin in the form of Securities, https://www.eurexcha nge.com/blob/2619852/17b1b525b40c96cc1a54636714f7f46f/data/appendix11_ab_2017_12_04.pdf

[334] *Id.,* 2.2.3

[335] Art 38.8 No.648/2012 EU regulation

[336]Louise Gullifer, 'Compulsory Central Clearing of OTC Derivatives: The changing Face of Provision of Collateral' in Louise Gullifer and Stefan Vogenauer (eds), at p. 401.

For the Individual accounts of clients, the CCP system can guarantee the assets of one client will not be used to cover the loss of another client, but can not ensure that there is equivalent securities could be returned back to CM if CCP is in insolvent. As above-mentioned, all the CMs are co-owners of the omnibus account at CSD. The securities in relation to the clients will be reflected at the CCP accounts. If CM defaults, CCP could port or return the equivalent cash or securities to clients. However, if CCP defaults, even though it will use its assets or default fund to meet the whole amount owed to CM, it is not certain that clients could get the equivalent amount to their margin. Otherwise, from the legal and academic perspective, the clients could not put securities as margin directly to CCP.Under the principal-to-principal model, the counterparty of a client is the CM and the margin is used to secure the claim it owed to CM rather than CCP. It is disputable that one party to grant security to another party who does not hold the secured claim.[337] There is also a control problem if the clients have accounts to put securities at CSD level as the above-mentioned situation of CM. For the clients who choose the omnibus account, the position of them is similar to the clients who hold individual accounts. However, for the deal of excess margin, the residue securities will not be allocated exactly concerning each client but are pro-rata distributed among the clients.

4. The LSOC model in the US

In contrast to different account types provided by EU regulation, the CFTC in US adopt only one option called LSOC (legal segregation, operational commingling model). This model requires that the collaterals of clearing clients are segregated from the house account of CM, but are kept together in one account.[338] This model differs from the physical model such as ISA account prescribed in the EU regulation because there is no choice of separate accounts at the CCP level for clients. But it can offer more protection to clients' asset than OSA on gross basis. The OSA on gross basis is based on the rational that the higher value the margin

[337] In the civil law country such as Germany, due to the accessory nature of pledges, Damrau Münchener Kommentar BGB, 6th,2013

[338] CFTC final rule on the protection of cleared swap customer contracts and collateral and conforming amendments to the Commodity Broker Bankruptcy Provisions. CFTC official website.

provided, the lower risk the clients can not get the payment. However, the margin in omnibus account can be used to meet any default party's position. This model is actually similar to the future model applied in US market. Even though the LSOC model can not identify the specific position of each customer, it will calculate the value of each customer's position based on the records held by CM and not use the collateral of any non-default party of the defaulting CM. The clients who choose LSOC model still expose to the risk that they may share the excess margin pro rata. The acceptance of LSOC model is to make a balance between the client protection and the high cost of system operation.

C. Summary

The provision of margin is a key risk management tool in the CCP clearing regime. The first part of this chapter introduce the basic information of margin, and compare the margin posted under bilateral contract and that under CCP regime. One point is that the use of collateral will promote the liquidity of market and lower the cost of transaction, however, it will also increase the risk that the collateral provided by clients can not be safety protected. The cross border transactions and different regulations will increase the complexity of margin protection issue. Furthermore, market participants almost agree that the margin requirement of CCP clearing will lead to the high demand of collateral and the financial market will under more pressure. After analysis it could be concluded that the increasing demand for high liquidity collateral is caused by several reasons and clients clearing can alleviate the presumed effect in certain circumstances. If all the collaterals are physically segregated, the netting will certainly have less effect. Therefore, the different levels of protection which are correspondent to the clients' ability of undertaking risk will be more effective. However, one issue shall be raised whether CCP has the complete organization and strategy to govern the risk of default by CM, even the default by itself, and comply with the aim of regulators will be analyzed in the next chapter.

Chapter 4. The new governance of CCP as a market infrastructure

A. The reasons of the new governance of CCP

I. CCP as a source triggering systemic risk

After the financial crisis, the function of CCP is recognized by regulators to alleviate the systemic risk and to control the contagion effect throughout the market. However, many financial associations realize that the risk management of CCP is so

important that the infrastructure is avoided becoming the reason of cumulative risks. With the increasing reliance on the CCP clearing after implementing new regulation in jurisdictions of main OTC derivative markets, how to address the "too big to fail" (TBTF) issue of CCP is raised in the financial market.

On the one hand, CCP has the TBTF nature because it guarantees the performance of OTC derivative contracts and assumes the probable credit risk of either party. On the other hand, this probability increases since more types of OTC derivative contracts and more market participants with varying credibility are subject to the mandatory CCP clearing rules. However, the regulatory response to CCP and banks is different: regulators use strict rules such as capital requirements based upon the spirit of Basel III[339] and Volcker rules[340] to prevent banks taking excessive risks, but they must tolerate the credit risk taken by CCP.[341] There is no certain resolution to solve the collapse of big CCPs.

Why are the regulators reluctant to restrain the CCP's clearing capacity? (network externaties) 1. In the chapter 3, it is mentioned that banks absorbs money from depositors and the deposit is the basis that banks relied upon to carry out other riskier activities. Similarity, CCPs rely on margin and defaulted funds provided by members to guarantee credit risks. Especially the initial margin will likely to be more collected than the actual amount under the CCP's calculation. It implies that a CCP with more funds can supply stronger management of risks. 2. In addition, the aim of CCP as the market infrastructure is the guarantee function, whereas the banks are keen engaged in short-term funding for the maximum of their profits. The pursuit of excessive profits by bankers in Wall Street is denounced by general public so that the government shall take measures to prevent bail-out issue using the money of taxpayers. However, the motive of CCP to develop more business is justified. 3.The last reason is that more participants will take part in the multilateral

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[339] Based upon the Basel III agreement, the global systemically financial institutions must have higher absorbency capacity to reflect the greater risks that they pose to the financial system. Basel III implemented in US through Dodd Frank Act and EU through CRR and CRD.

[340] § 619 (a) (1) Dodd-Frank Act" Unless otherwise provided in this section , a banking entity shall not –(A) engage in proprietary trading; or (B) acquire or retain any equity.....or sponsor a hedge fund or a private equity fund"

[341] Felix B. Chang, The systemic risk paradox: Banks and Clearinghouse under regulation, 2014 Colum. Bus.L. Rev.747, p.751

netting provided by CCP, which will reduce the liquidity needs of members who were counterparties of bilateral contracts.[342] Some research reports prove this point[343]. From above reason it could be seen that the regulators tacit approve that the existence of large CCP favors the implementation of its functions. They hold that CCPs risks could be better recognized and managed and reduced by efficient netting.[344]

But the systemic risk caused by the failure of CCP is not impossible. First, regulators are inclining to exempt financial clearinghouse from bail-out.[345] It means that CCP need more skin in the game (CCP's capital requirement) to absorb the risks by itself. In addition, if CCP has more skin on its game, the liquidate assets held by clearing members will be decreased, which situation will deteriorate the counterparty's credibility. The users are sources of CCP's fund, hence the circular relation between CCP and users just transfer the risks to CCP.

II. The paradox between non-profit organization and for-profit corporation

In the last chapter it refers that CCP takes part of responsibility as a SRO. After the crisis, the governments expect CCP as the SRO to prevent risks, but they do not fully trust these institutions since SROs set up by member-driven institutions. They take more control of these institutions to achieve the regulatory goal, whereas this policy is criticized by market participants. The form of SROs could be the non-profit

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[342] Amandeep Rehlon, Dan Nixon, Bank of England, Central counterparties: what are they, why do they matter and how does the bank supervise them; The liquidity need is a synonum for margin requirement, in previous bilateral contract the amount of margin will be agreed by parties and this amount may be lower than the amount required by CCP clearing. However, in order to promote CCP clearing, the margin requirement of non centrally cleared derivatives shall reflect the high risks of the contract and more than the margin required by cleared contract.

[343] Rodney Garratt, Peter Ziemmerman, Does Central Clearing reduce counterparty risk in realistic financial networks? FRBNY, Staff reports No.717, March 2015 https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr717.pdf; Duffie, Darrell and Zhu, Haoxiang, Does a Central Clearing Counterparty Reduce Counterparty Risk? (April 27, 2011). Rock Center for Corporate Governance at Stanford University Working Paper No. 46; Stanford University Graduate School of Business Research Paper No. 2022. Available at SSRN: https://ssrn.com/abstract=1348343 or http://dx.doi.org/10.2139/ssrn.1348343

[344] Such an opinion reflected in Andrew Gracie's speeach "CCP resolution and the ending too big to fail agenda" http://www.bankofengland.co.uk/publications/Pages/speeches/2015/871.aspx

[345] See Proposal for a Regulation on a framework for the recovery and resolution of central counterparties and amending Regulations (EU) No 1095/2010, (EU) No 648/2012 and (EU) 2015/2365; COM/2016/0856 final - 2016/0365 (COD)

entities or the for-profit corporations and who has more power in the governance regime will significantly affect the risk management of CCP. Otherwise the demutualization of CCP is a trend that brings about positive and adverse effects.

In history, a lot of CCPs are non–profit organizations.[346] The non-profit organization can be used to some extent to address the contract failure issue in public good.[347] However, from the author's point of view, CCPs as financial market infrastructure is not public goods because it is excludable, which means that the infrastructure will prevent someone to participate in it.[348] It could be called a "club good" that serves a particular group of people (CMs) even though there is no rivalry between them.[349] According to Hansmann's view, the club is a typical type of mutual non-profit entity. In this case, the word "mutual" and "non profit" will be explained separately. The non-profit entity does not mean that it is unprofitable, but it restricts the distribution of profit to the controlled person,[350] which is the most prominent distinguish between non-profit entity and the profit-seeking one. However, a crisis of confidence exists between the members and the operators about whether the non-profit entity could be effectively managed to allocate costs appropriately to each member, and the operation is aligned with its established goal.[351] Therefore, a compromise is that the "mutual" non-profit is established to give members more right to control the entity.

Still taken the club as an example, the operation and the service provided by the club rely on the annual fees taken by members. In similarity, the operation of CCP will

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[346] For example, the Canadian Derivatives Clearing Corporation (CDCC) was established in 1975 as a not for profit corporation. Today it is a for profit corporation soly owned by Montreal Exchange http://www.bankofcanada.ca/core-functions/financial-system/clearing-and-settlement-systems/ CME clearing is a part of CME group and the corporation was non profit entity founded in 1898 CME group annual report 2012 , page 2; LCH was a not for profit private limited company with 127 member shareholders. LCH placing Memorandum, N.M. Rothschild and Son Ltd 1996

[347] Henry B. Hansmann, The role of Nonprofit Enterprise, 89 Yale L.J.835, April 1980, p 850,851

[348] Running the world's markets : The Governance of Financial Infrastructure, Ruben Lee, Princeton University Press, 2011, page 10 , There are two key attributes of the public good, one is non rivalrous, another is non excludable. However, there are threshold especially capital requirements to becoming a member of CCP. It is not a pure public good.

[349] An economic theory of clubs, James M. Buchanan, Economica New Series, Vol.32, No.125 Feb, 1965 page 1-14

[350] *Id.*, Hansmann, p. 838

[351] *Id.,* Hansmann, p 893

depend on the contribution of its clearing members especially the big ones. If the majority of the board of directors can represent the benefits of clearing members, they will trust CCP and are willing to contribute more to this entity. In addition, the clearing members mutualize risks, which creates incentives for all members to support a strong risk control.[352] Another interesting point mentioned by Hannsmann is that the non-profit organization can restrain the monopoly power of the entity.[353] The status of CCP as a market infrastructure is very similar to the natural monopoly[354] since only few CCPs can afford high fixed cost such as electronic system and the establishment of better risk model. Moreover, the cost of each member is reduced by the use of CCP.[355] Therefore, the users incline to use one CCP to expand netting efficiency and to avoid the multiple service fees. A for-profit CCP will exploit all members for excess profit based on its monopoly position,[356]so it seems reasonable that the incentive for profit will be restrained if CCP is founded as a non-profit entity.

However, with the development of the demutualization of Exchange, Many CCPs as part of the Exchange is also changed with this trend.[357] Today many CCPs are the for-profit corporation.[358] The demutualization can be called as corporatization, which means that the entity is accountable to shareholders rather than a small proportion of members. Through this process, the market infrastructure is essential to attract new institutional investors so that few exchanges make the initial public offering. The reason of the demutualization of CCP is similar to that of exchange, and the exchange demutualization process is detailed analyzed by the IMF working paper in 2002. The main forces of the change are technology innovation and

[352] Kroszner, Randall S., Central Counterparty Clearing: History, Innovation, and Regulation. Economic Perspectives, Vol. 30, No. 4, Fourth Quarter 2006. Available at SSRN: https://ssrn.com/abstract=948773
[353] *Id.,* Hansmann, 894
[354] *Id.,* Felix B. Chang, at p. 805
[355] Moskow, Michael, Public Policy and Central Counterparty Clearing. Economic Perspectives, Vol. 30, No. 4, Fourth Quarter 2006. Available at SSRN: https://ssrn.com/abstract=948787, p. 47 In history, the members can save tax and recordkeeping cost.
[356] *Id.,* Hansmann, p. 893
[357] Huang Jiabin, The law and Regulation of Central Counterparties, Hart Publishing, at p. 189
[358] Gary Cohn, Clearing houses reduce risk, they do not eliminate it https://www.ft.com/content/974c2c48-16a5-11e5-b07f-00144feabdc0

globalization leading to more intensive competition.[359] The result is that (1) the growing trade volume in exchange also cause the increasing clearing volume of CCP, therefore, the scale of CCP is growing due to the technology consolidation and merger. (2) The demutualization reflects the divergence of interest. The CCP will not only reflect the interest of a few traditional members. Although the large financial institutions have fewer stakes in the exchanges because of cross-border listing, these institutions still contribute most fund to CCPs and the use of a single CCP is to some extent in their best interests.[360] (3) The CCP will not only be owned by or run by its members who participate in the business.[361] The goal of a for-profit corporation is endeavored to maximize the profit of investors. Extra investors will afford losses limited to their amount of share and do not provide extra fund supporting the waterfall process of CCP.

III. Summary

The above analysis shows that the character of CCP is complexity and there is a wider conflict of interests within the regime. From one side, the regulators are more conscious about the new systemic risk caused by "putting all eggs in the portfolio," and they do not trust big financial institutions to control CCPs since their greedy is seen as one reason for the outbreak of financial crisis. From the other side, important financial institutions consider that besides the margin and default fund they provided, CCPs get most profit for providing services to them. Sometimes their ownership to CCP does not match the risk taken by them so that the clearing members always question the risk management capability of CCP. Except the conflict induced by the conflict between public regulation and the private entity, the interest heterogeneity between different members in a for-profit corporation is further intensified by the new regulation. Under this circumstance, CCP is neither a non-private "club" for few members nor a pure for-profit corporation. It is a

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[359] Jennifer Elliott, Demutualization of Securities Exchanges: A Regulatory Perspective, IMF Working Paper No. 02/119, p. 8

[360] *Id.*, Hua Jiabin, p 190-192

[361] See the company structure of LCH, "LCH Group Ltd is 57% owned by the London Stock Exchange Group, and the remaining part is owned by users and other exchanges" http://www.lch.com/about-us

corporation that implements some self-regulation function. Therefore, a new governance of CCP shall be established based upon the diverse interests of parties.

B. The detailed analysis of the conflict between parties in CCP regime

The demutualization of clearinghouse engenders the discussion on the governance structure of clearinghouse. In the traditional view of the corporate law, the appropriate governance structure will effectively mitigate the agency cost problem in corporation and preserve the interests of stakeholders, achieving the efficient operation of the corporation and its market functions.[362] In another word, the governance structure is used to overcome the conflicts of interests in the corporation. The demutualized clearinghouse also faces the conflict of interest problem. However, the first aim of clearinghouse corporation as market infrastructure is preventing the systemic risk, which is not a primary task afforded by the normal corporation pursuing profit and efficiency.[363] In this part, the analysis of different stakeholders' interest can help understand their attitude to the task of systemic risk. Only with the understanding of the stakeholders' condition, the better comments can be given on governance rules for clearing houses. The purpose of regulation to safeguard the conflict of interests will not impact the safety and efficient risk management of CCP.

Ⅰ. The conflict of interests between dealer users: competition and risk management

There are big dealers and small ones, direct users and indirect users of CCP in the market, and the clearing members consist of banks, dealers or other participants.[364] It is reasonable that CCP has its requirement to decide who could be the clearing

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[362] Based on the glossory corporate governance of OECD https://stats.oecd.org/glossary/detail.asp?ID=6778, Wednesday, July 13, 2005

[363] 2012 BIS CPMI Principles for Financial Market Infrastructures (PFMIs) Principle 2 Governance " An FMI should have governance arrangements that……support the stability of the broader financial system, other relevant public interests consideration and the objective of relevant holders. However, there is no term about the public interest considerations in OECD's explanation.

[364] For example, OCC clearing member comprise 115 of the US largest broker-dealers, future commision merchants and non US securities firms; optionsclearing.com

member. However, the decisions made by CCP are always suspected of reflecting the benefits of big dealers as the direct clearing member. In Griffith's articles, he discusses that the big dealers do not like to clear some OTC contracts since they can get more profits using the incomplete information market.[365] But now these contracts can not be exempted from the mandatory clearing requirements. Therefore, the discussion is meaningful upon the situation of the mandatory clearing. Banks who are clearing members can get benefit from the new clearing rules, which includes the reducing capital requirements[366] and the zero-sum (no-risk) transaction. Whereas from the perspective of pursuing maximized profit, the benefits of central clearing may not trade off the increased costs of margin provided by relative small members. Therefore, the new regulations will significantly impact the revenue and the risk model of members.

One major conflict of interests the regulators worry about is that the big dealers will seek more control of CCP and impede new market participants accessing to it. Regardless of the different size of these members, many members taken the role as dealers do not expect clearing mandatory due to the reduction of profit. As above-mentioned, the benefit of pursuing profit is consistent among all members, but the relationship between members is competitive. Therefore, the existed CCP clearing members will elevate the threshold of admission to limit the access of new clearing agency. In the BIS report for the access to CCP, it points out that the access criteria originated from voluntary clearing had the effect of precluding smaller market participants to access CCP.[367] Whereas under the circumstance of the voluntary clearing[368], the precluding of small dealers is not incongruous. The reason is that the risk reduction has a positive correlation with dealer's efficiency to transfer the risk

[365] Griffith, Sean J., Governing Systemic Risk: Towards a governance structure for Derivatives Clearinghouses, Emory Law Journal, Vol.61, No.5, p. 1194 (Griffith, Governing Systemic Risk: Towards a Governance Structure for Derivatives Clearinghouses, 2012)

[366] Art 306. 1.(a) Regulation (EU) No 575/2013, an institution shall apply a risk weight of 2% to the exposure values of all its trade exposures with QCCPs;

[367] CGFS Papers No.46, The macrofinancial implications of alternative configurations for access to central counterparties in OTC derivatives market. http://www.bis.org/publ/cgfs46.pdf

[368] in this text it means that a large amount of contracts are still bilaterally cleared.

and the efficiency is high relative to dealers' market power which also brings higher revenues.[369]

There is a consensus that the more intense competition between dealers reduce each dealer's revenue and increase the probability of dealers' default. Since the credit risk is the most concerned issue by market participants, the trade-off between risk and competition is hard to reach. In the clearing market, the market power of big dealers has been established before the crisis[370]: it could be argued that the dealer's power in OTC market brought no negative effects to CCP and it operated successfully during the crisis. However, the amount of cleared contract before the crisis is much smaller than that of OTC derivative contracts. The financial crisis also demonstrates that the dealer's market power and their pursuit of profit make them ignore the excessive risk they have taken, which weakens the conclusion that dealer's profit improves the risk management. In the circumstance of CCP clearing, the relationship between dealers' competition and the efficiency of risk management has been changed.

The article of Fontaine, Perez Saiz and Slive (2012) points out that the open and fair access rule of CCP will enhance the diversification of members but with stricter risk controls.[371] The open access to financial market infrastructure (FMI) is a principle prescribed in the report of BIS- IOSCO[372] which "can encourage competition among participants and promotes efficient and low-cost payment, clearing, and settlement."; [373]Besides, the FMI can set risk-related requirements to ensure that it can manage the risk arisen by participants effectively. These requirements include operational capacity, financial resources, legal powers and risk management expertise to

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[369] Perez Saiz, Hector and Fontaine, Jean-Sebastien and Slive, Joshua, Dealers' Competition and Control of a Central Counterparty: When Lower Risk increases Profit (June 1, 2013). Available at SSRN: https://ssrn.com/abstract=2022439, p20, p 27

[370] David Mengle, Concentration of OTC Derivatives among major Dealers, ISDA: Research Notes Issue 4, 2010 http://www.isda.org/researchnotes/pdf/ConcentrationRN_4-10.pdf

[371] Jean-Sebastien Fontaine; Hector Perez Saiz and Joshua Slive, (2012), Access, Competition and Risk in Centrally cleared Markets, Bank of Canada Review, 2012, Autumn, p18, p19

[372] BIS-IOSCO, Principles for financial market infrastructure, principle 18, april 2012, http://www.bis.org/cpmi/publ/d101a.pdf

[373] *Id.,* explanatory note, 3.18.2

prevent the exposure risk.[374] Impacted by the new regulations, CCP has lowered its participation conditions including reduced capital requirement and trade volume requirement to implement the open access principles, however, a situation not existed in bilateral clearing is that all participants shall observe the margin requirements of CCP. Compared to voluntary clearing, the mandatory clearing promotes the opportunity of market participants to access CCP favoring the hedgers but limit the risk these participants who can take.

Now returning to the dealer's interest, big dealers' interest is negatively affected by the CCP open access rule. Because these dealers are more concentrate on their profit from the trade and service, rather than the lower of default risk of each participant. One way to impact CCP rules by big dealers is to expand their ownership to CCP. One reason justifying the control of CCP by main dealers is that the risk taken by these dealers shall be proportional to the share of risk fund contributed by them. However, as mentioned before, the reliance on risk management capacity of dealers is reduced under the circumstance of CCP clearing. The strict access rule will bring about two results: (1) many small and medium-sized dealers can only access CCP as indirect clearing members and they do not control the CCP. On this occasion, small ones provide more margin to DCMs who conduct limited clearing service to their clients[375], which will disadvantage them in the competition; moreover, the DCMs can straightly block the access, since they can decide whether to conclude an indirect clearing contract or not. Besides, the activity of concentrating risk on DCM will also deviate from the aim of preventing systemic risk caused by SIFIs.[376] (2) The limitation prompts small dealers to become DCMs of other CCPs with more open access rules, however, in theory, this situation will make a hard trade-off between competition and risk management at CCP level. CCPs as for-profit corporation have incentives to lower its member requirement and relevant margin requirement to

[374] *Id.,* 3.18.1

[375] "an indirect clearer may face higher initial margin requirements imposed by its direct clearer than the clearer itself faces from the CCP, The macrofinancial implications of alternative configurations for access to central counterparties in OTC derivatives markets", CGFS papers, No 46, p.10, http://www.bis.org/publ/cgfs46.pdf

[376] The reason is that the CCP entail lower credit risk than the financial insitutions as DCMs, the dealers disagree over charge for CCP counterparty risk, because it is very unlikely to default. http://www.risk.net/risk-management/2457621/dealers-disagree-over-charge-ccp-counterparty-risk

attract more users, but the low participation requirement will also result in higher probability of default. In reality, there are few alternatives for the small dealers to become a DCM of another CCP, since one CCP will clear the most derivative contract of one product in the whole market.[377] With the stricter banking regulation after the crisis, the direct clearing members are also reluctant to provide indirect clearing services to new clients, because that clearing generates more cost to clearing members who shall hold amount of capital on their balance sheet to prevent the default of clients. From this point of view, the fair access of CCP is a better solution, which can help more participants to access global market and thus make the new mandatory clearing rules viable.

One argument is that if small dealers can participate in CCP directly and achieve more control of the CCP, it may cause the public good problem.[378] As above said, the pursuit of profits is the common interest of dealers, whereas the small dealers who contribute less to the default fund may be willing to take more risk to maximize profit. In comparison to big dealers using margin to control access, small ones are favor of lower margin requirement to attract more users to clear their derivative contracts.

II. The conflict of interests between dealer users and other shareholders

The main reason to analyze the conflict of interests between dealer users in different volumes is that the mere equity holders of the clearinghouse are in a very limited amount. Griffith lists two types of parties who hold a weak interest in the risk management of CCP but may become shareholders of it. These parties do not participate in the default waterfall process of CCP or have less contribution to it compared to the clearing members.[379] One is End-user, a kind of end users such as industrial corporations using derivatives to hedge their business are usually exempt from mandatory clearing, therefore they have no clearing relationship with CCP. Other end-users are consist of hedge funds and financial institutions who use

[377] For example, in the CDS market, there is only one CCP (CDS Clear) is EMIR authorized.
[378] *Id.,* Griffith, Sean J. p 1210
[379] *Id.,* Griffith, Sean J. p.1206, p.1209

derivatives more frequently to get profit. The latter one trading over the threshold will subject to the mandatory clearing rules. Even though these parties will finally bear the loss if CCP has liquidity risk, their interest is the reduction of trading costs of transactions rather than risk control. Another type is the non-user investor as the shareholder of CCP, distinguished from user shareholders whose risk afforded is mainly proportional to shares, non-user shareholders focus more on the profits from the operation of CCP.

Based on the governance report of major clearinghouses, the ownership of clearinghouses consists of exchanges and participants of CCP.[380] The status of Exchanges in CCP is similar to equity holders: Firstly, only clearing members rather than exchange will contribute to the default waterfall systems; Furthermore, the acquisition of stakes in clearinghouse is the business strategy of Exchanges, which is called "vertical integration".[381] Exchanges who become shareholders will get substantial profit from the operation of CCP, since OTC clearing plays more and more important rule in the post –crisis financial regulation reform. The IMF working paper points out that the governance structure of for –profit CCP with Exchanges, as shareholders do not have enough motivation to incentive risk management.[382] Reducing the cost of the whole transaction is in line with the interests of exchanges, while the issue of risk management is not the primary concern of them.

From the above analysis of conflicts between different users as shareholders and between users and other shareholders, a dilemma, imbalance of interests, is existed in the coordination of various shareholders. The recent examples of these conflicts are the query of small members' motivation in risk management[383] and the debate

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[380] Froukelien Wendt , IMF Working Paper No.15/21, Central Counterparties: Addressing their too important to fail nature, Table 3. Governance Structures of Largest CCPs Worldwide, p. 14.

[381] The Vertical intergration and its effects to protect market power are explained in the CPSS report. See Market structure developments in the clearing industry: implications for financial stability 1.2, Report of the Working Group on Post-trade Services, November 2010 http://www.bis.org/cpmi/publ/d92.pdf

[382] *Id.,* CPSS working paper, p 53

[383] Miller, R.S. (2011). Conflicts of interest in derivatives clearing (Electronic version). Washington DC: Congressional Research Service. p.8

of whether the CCP shall have more skin on the game.[384] The former example reflects the expectation of big clearing members who want to dominate the intermediate clearing services; while the latter shows the market participants call exchanges and other shareholder groups to fund CCP, increasing the resilience of CCP to cope with possible default events. The underlying reason of this advice is that the clearing members will under tremendous stress if CCPs overly relies on the margin and default funds provided by them. However, some exchange group corporations hold an opposite opinion to this advice.[385] This disparity is also relevant to the governance model, as a quote from DTCC (The Depositary Trust & Clearing Corporation) "DTCC is user-owned industry utility, adopting CCP contributions that scale directly with increases in cleared activity would simply increase clearing costs without providing any genuine risk management benefit."[386] Except to the CCPs as mutualised utility, other demutualized CCPs shall consider to add its own contribution with increasing risks. This method can be seen as an alternative to user members who think their ownership is meager in comparison with the risk they took. The more skin on the game help align the heterogeneity interests between user shareholders and others.

III. The conflicts between public interests and private interest

The imbalance of risk taken and profit allocation between shareholders cause the CCP as a public good to prevent systemic risk. In the past, the regulators fail to oversight the activities of the financial institutions, the industry regulatory institution such as ISDA focus on the mechanism of providing efficient transaction and reducing the legal uncertainty.[387] On the one hand, after the financial crisis, the FMIs such as CCP has been considered by regulators as important method inhibiting

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384 Philip Stafford, JP Morgan calls for tougher clearing house rules, Financial Times, May 3, 2017,https://www.ft.com/content/5e30f0fa-2fe0-11e7-9555-23ef563ecf9a

385 CME group, Clearing-Balancing CCP and Member Contributions with exposures, the report points out that CCP's skin in the game does not protct clients or an insolvent clearing member it self. p.1. https://www.cmegroup.com/education/files/balancing-ccp-and-member-contributions-with-exposures.pdf

386 DTCC, White Paper to the Industry, CCP Resiliency and Resources, June 2015, p.5, (Depository Trust and Clearing Corporation (DTCC), 2015)

387 Eleni Tsingou, The governance of OTC Derivative markets, Chapter 7 of the book The Political Economy of Financial Market Regulation, Edited by Peter Mooslechner, Helene Schuberth, Beat Weber, Edward Elgar Publishing Limited 2006, p. 169, the private sector try to preempt regulatory interference.

the default of individual market participants causing systemic risks. On the other hand, the new systemic risk resulting from the interconnectedness of CCP and other financial institutions attract the attention of regulators. The most disadvantage of CCP governance without public interest consideration is that all shareholders' activities protecting their individual interests will lead to the impairment of risk management function of CCP. To the equity shareholders, they concern more about the profitability of CCP; as Köppel and Monnet said, the for-profit CCP will continue a risky trade since CCP can get benefit from operation whereas users rather than owners will take the cost.[388] To the user-owners, a CCP controlled by them will likely to close the trade as soon as possible to avoid the default risk, because they are not willing to use their own contribution to cover the loss incurred by others.[389] When the inner corporate governance structure may not be effectively implemented and endanger the CCP's main function, public authorities will regulate it to achieve the public aim. Besides, regulators have many approaches to affect the governance structure of FMI.

Since all the relevant authorities will supervise the FMI, in theory, they can approve or disapprove the rules promulgated by FMI, stop a transaction to use FMI, and impose a penalty on these institutions for the legal violation.[390] These direct regulatory activities are decided solely by authorities to achieve its public aim and are not constant or frequently taken by them.[391] The governance of FMIs interfered by authorities is different from those activities said above; usually, the regulators will more likely to take measures in which the infrastructure has a private incentive to promote public interests.[392] The regulations incline to principle guidelines. Whereas after the crisis, the regulators promulgate mandatory rules relevant to the CCP's internal governance structure. These methods include but are not restricted to the qualification requirement of board members and managers, the appointment of

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[388] Koeppl, Thorsten V.; Monnet, Cyril (2008): Central Counterparties, CFS Working Paper, No. 2008/42, https://www.econstor.eu/bitstream/10419/43277/1/599235330.pdf

[389] Id., Koeppl, Monnet, and Cyril

[390] Lee, Ruben, The Governance of Financial Market Infrastructure (December 28, 2010). Oxford Finance Group, Princeton University Press, p. 339

[391] CPSS-IOSCO Principles for financial market infrastructures, Responsibility B: 4.2.3, p.128 http://www.bis.org/cpmi/publ/d101a.pdf The Authorities should have powers to induce change or enforce corrective action

[392] *id.,* Lee, Ruben p. 340

the independent directors and imposing maximum limits on the voting rights.[393] However, there are some criticisms about these methods including the suspicious of the efficiency of independent director and the suspicious of the risk-management capacity of small users based on limitations of member control. In the next part, the regulations of governance in different jurisdictions will be analyzed in order to find a better way to achieve the goal of public interest.

C. The governance rule proposed by US and EU

I. the US proposed rule to mitigate the conflict of interests

1. The introduction of the rules and the relevant definitions

The Sections 725 and 726 of the Dodd-Frank Act stated that the CFTC should adopt rules to mitigate the conflict of interests in DCOs and the manners such as the numerical limits or control of voting rights to improve the governance of DCOs.[394] The CFTC released proposed rules in 2011 to further the implementation of the Dodd-Frank Act, so did SEC based on its authority to regulate security-based swap. Both rules published by CFTC and SEC includes strict ownership limits. This method was put forward by Stephen Lynch in an amendment. However, the Senate initially rejected this amendment but required regulators to set up rules against the conflict of interests.[395] The regulatory rules prescribe which entities shall subject to the limitations and the percentage of limitation.

Following CFTC rules, the proposed rule does not place any restrictions on ownership of economic equity in a DCO (derivative clearing organization), DCM, or

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[393] EMIR and Dodd-Frank Act

[394] 17 CFR Parts 1, 37, 38, 39, and 40 Governance Requirements for Derivatives Clearing Organizations, Designated Contract Markets, and Swap Execution Facilities; Additional Requirements Regarding the mitigation of Conflicts of Interest, 76 FR 722, 1/6/2011

[395] H.Amdt.521 to H.R.4173, Amendment provides rules toword the equitable governance of clearing houses and swap exchange facilities, the amendment was adopted by the house but not taken by the Senate. Miller, R.S. (2011). Conflicts of interests in derivatives clearing. Washington, DC: Congressional Research Service. p.6

SEF. However, there are two alternative limits on the ownership of voting equity or the exercise of voting power can be chosen by DCO[396]:

First Alternative: Individual Limit. No individual DCO member (and its related persons) may (1) be beneficially own more than 20 percent of any class of voting equity in the DCO or (2) directly or indirectly vote (through proxy or shareholder agreement) an interesting exceeding 20 percent of the voting right of any class of equity interest in the DCO; Aggregate Limit. The enumerated entities (and their related person), regardless of whether they are DCO members, may not collectively (1) own on a beneficial basis more than 40 percent of any class of voting equity in a DCO, or (2) directly or indirectly vote (e.g., through proxy or shareholder agreement) an interest exceeding 40 percent of the voting power of any class of equity interest in the DCO.

Second Alternative: no DCO member or enumerated entity (whether or not such entity is a DCO member), and their related persons, may (i) beneficially own more than 5 percent of any class of voting equity in the DCO or (ii) directly or indirectly vote (e.g., through proxy or shareholder agreement) an interest exceeding 5 percent of the voting power of any class of equity interest in the DCO.

From literally, the text of CFTC rules is aiming at restricting the dealer bank control of CCP. As noted above, the authorities not only concerns that the profit-seeking character of dealers will impair the CCP mandatory clearing rules as a result that many derivative contracts are exempted as bilateral, but also the small group of dealer control will impede free and access rule of financial market infrastructure. Some critics in the industry hold that the loss of control will demotivate users to contribute funds to default process and cease to use CCP clearing.[397] In this situation, the voting right of enumerated institutions not exceeding 40% percent and that of individual institutation not exceeding 5% percent are more likely to lead to a

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[396] 17 CFR Parts 1, 37,38,39, and 40 Requirements for Derivatives Clearing Organizations, Designated Contract Markets and Swap Execution Facilities regarding the mitigation of Conflicts of Interest, 75 FR 63722, 10/18/2010 and its relevant proposed Rulemaking Q&A, http://www.cftc.gov/idc/groups/public/@newsroom/documents/file/governance_qa.pdf

[397] Deutsche Bank Comment Letter on File No. S7-27-10 (November 8, 2010) p.3, p.4, https://www.sec.gov/comments/s7-27-10/s72710-9.pdf

deadstock of board decision. On the face of it, the stakes held by institutions are not lower than the proportion held by control shareholders in the standard American corporation, whereas the problems in this model are obvious: The too dispersed equity structure will cause the expansion of managerial power.[398] It is suspicious that the executives who are incentivized by the profit will manage risk more effectively. The executives and the other shareholders who do not take default risk directly have more interest to promote profits rather than control the default risk.

The commission also proposes structural governance requirements that:[399]

1. The board of directors of DCO must include 35 percent, but not less two public directors. 2. (ii) each DCO, DCM, or SEF must have a nominating committee with at least 51 percent public directors; (iii) each DCO, DCM, or SEF must have one or more disciplinary panels, with a public participant as chair; (iv) each DCM or SEF must have (A) a regulatory oversight committee (''ROC''), with all public directors, and (B) a membership or participation committee, with 35 percent public directors; and each DCO must have a risk management committee (''RMC''), with at least (A) 35 percent public directors and (B) 10 percent customer representatives

Except to the ownership and voting control, the independent director as a tool to mitigate the probability conflict of interest between directors chosen by dealers and directors elected by other shareholders. As Griffith said, the independent director is used widespread in the corporate governance, especially the listed company in the US, to remedy the principle and agent problem between management and shareholders.[400] In this case, the CFTC proposed rule use the phrase "public directors" rather than "independent directors".

In accordance with the CFTC adopted definition of "Public Director", which refers to Section 5(d) (15) of the Commodity Exchange Act, the director shall do

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[398] It derives from the typical agent principle problem developed by Coase (1937), the weakness of shareholder model is the conflicts between strong managers and dispersed and weak shareholders. Maria Maher and Thomas Andersson, Corporate Governance: Effects on firm performance and economic growth, OECD report 1999, para 16, 20
[399] *Id.,* the proposed rule 17 CFR Parts 1,37,38,39 and 40
[400] *Id.,* Sean J. Griffith, Emory Law Journal, Vol.61.No.5.2012

not have “material relationship” with the institution (here is DCO)[401]. This “material relationship” can be summarized: (1) the director is in the management of the institution or its affiliates; (2) the directors, or a firm with which directors manage as officers, directors or partners, receives $100,000 in combined annual payment from the institution (DCO). (3) the two relationships above mentioned also apply to the “immediate family” of the director.[402] In the core principle, the rule emphasizes the public interest taken by self-organization institution. The independent of public directors meant no material relationship does not totally equal to the function of traditional independent director in the US.

The definition of “independent director” is not an ex-ante definition.[403] It could be simply defined that the director is not dependent on someone or something that is related to the corporation.[404] In this case, the requirement to public directors without “material relationship” with institutions also emphasizes the independent. This mechanism differs from jurisdiction to jurisdiction and the issue of whether the director is independent arisen after the occurrence of conflicts in the governance, however, the conflicts are also different and depend on the characteristic of the corporation. In the listed corporation with dispersed ownership structure, the independent directors are independent from managers and as a tool to prevent their rent-seeking activities damaging the shareholders' interest. These directors served for all the dispersed shareholders. Whereas the situation in the clearinghouse regime is much similar like that in the institutional investor held corporation, the conflict is between shareholders and other stakeholders such as non-controlling shareholders.[405] As noted in Section B, The conflicts between users and other equity holders and dealers' motivation to

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[401] Core principle 16 (b) (2) of section 5(d) (2) of the CEA act, 17 CFR Appendix B to Part 38, https://www.law.cornell.edu/cfr/text/17/appendix-B_to_part_38

[402] *Id.*, princIple 16 (b) (2), Section(C), (D)

[403] Delaware Corporation Law, Title 8 , Chapter 1, §141 (a) http://delcode.delaware.gov/title8/c001/sc04/, The Delaware Corporation law as the typical state corporation law will review the independence of director case by case;

[404] Baum, Harald, The Rise of the Independent Director: A Historical and Comparative Perspective. Independent Directors in Asia: A Historical, Contextual and Comparative Approach, Dan W. Puchniak, Harald Baum, and Luke R. Nottage, eds., Cambridge University Press, 2017, Forthcoming; Max Planck Private Law Research Paper No. 16/20. Available at SSRN: https://ssrn.com/abstract=2814978

[405] *Id.*, Griffith, Sean J. p 1224

control the board are major concerns of the authorities. A more complicated issue here is that "the governance structure of a clearing and settlement system should address not only the needs and interests of the different stakeholders in the system, but also the national, transnational and community interests in the operation of the system and the public interest in the minimization of systemic risks." [406] However, will the control by public directors be a way to resolve the conflicts in the CCP regime?

In the process of the commentary of the CFTC proposed rules, clearinghouse such as LCH support the requirement of public directors but have a query that the 35% percent of board are public directors is too high.[407] Conversely, the CME group which owns CME clearing strongly disagrees with this composition rule. In the comment letter submitted by CME, It purported that the board members are always prohibited to further their own interests since they have a fiduciary duty to the corporation and all the shareholders, not just to the controlling shareholder; therefore, the composition is redundant to minimize the conflict of interest.[408]

2. The public director in the board

From the above analysis, the public director here shall not only independent of the management but also of the controlling shareholders. Otherwise, The fiduciary duty held by independent directors is aimed at shareholders and the corporation rather than all stakeholders.[409] Therefore, how can a public director not only represent the full range of shareholders but also promote the public interest? Different constituencies represented by public directors may cause the

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[406] Russo, Daniela; Hart, Terry L.; Papathanassiou, Chryssa (2004) : Governance of securities clearing and settlement systems, ECB Occasional Paper, No. 21, European Central Bank (ECB), Frankfurt a. M.

[407] Roger Liddel from LCH.Clearnet, Comment for Proposed Rule 75 FR 63732, Comment No: 26372, 11/5/10, p. 5, https://comments.cftc.gov/PublicComments/ViewComment.aspx?id=26435&SearchText=

[408] Kathleen M. Cronin from CME Group Inc. Comment No: 27266, 11/17/2010,p. 7

[409] *See* opposite opinion, the director has the fiduciary duty to stakeholders. van der Weide, Mark E., Against Fiduciary Duties to Corporate Stakeholders. Delaware Journal of Corporate Law, Vol. 21, No. 1, 1997. Available at SSRN: https://ssrn.com/abstract=182934;
Blair, Margaret M. and Stout, Lynn A., A Team Production Theory of Corporate Law. Virginia Law Review, Vol. 85, No. 2, pp. 248-328, March 1999. Available at SSRN: https://ssrn.com/abstract=425500

problem; as noted above, there is a conflict between the public interest and private profit of all shareholders, and each shareholder does not hold the full motivation to promote the risk management of CCP. It seems that public directors without profit-seeking motivation will enhance the efficiency of CCP, but the effect of public director in CCP is obscure and problematic: Firstly, the CFTC's final definition of "pubic director" more focuses on the independent characteristic which harmonizes with the definition of "independent director" prescribed by SEC, rather than include any meaning of public interests representation in this definition. (Regulatory Oversight function)[410] Furthermore, there are many criticisms of the role of independent directors in corporate governance and these are summarized here[411]: (1) The definition of "independent" is still hard to be certain; (2) The independent director does not have enough time or financial motivation to perform its supervision; (3) they make the judgment based upon uncompleted information provided by management; (4) they are independent but lack of professional capability. The main role taken by independent directors are supervision, which means that these directors do not overly intervene in the management of the CCP. One core function of CCP is risk management. If the risk management committee with a high percentage of directors who does not hold enough experience to manage risk, and the failure of manage risk can not be seen as the violation of fiduciary duty[412], the supervision function of independent directors shall be increased but limited in the scope of sub-commissions of the board. As a result, the excessive use of independent director at the board level is not a resolution to mitigate the conflict of interests.

3. The public director in the risk management committee (RMC)

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[410] 75/FR 63732 (10/18/2010), the CFTC Release; 69/FR 71127 (12/8/2004) the SEC Release; Clarke, Donald C., Three Concepts of the Independent Director. Delaware Journal of Corporate Law, Vol. 32, No. 1, pp. 73-111, 2007; GWU Legal Studies Research Paper No. 256; GWU Law School Public Law Research Paper No. 256. Available atSSRN: https://ssrn.com/abstract=975111 An assumption that the non-managerial (independent) directors can be seen as implementors of external regulation, here is the finanicial regulation. A representative of public interest should independent from everyone who has an interest in the corporation. At this point, the independent directors who are elected by shareholders are hard to accountable to external regulators.

[411] *Id.,* Lee, Ruben, The limitations of the role of independent directors are illustrated in page 278-284

[412] See In re Caremark International Inc. Derivative Litigation, 689 A.2d 959 (Del.Ch.1996)

Setting up the risk management committee in DCO reflects that the preventing of systemic risk is a prioritized concern of regulators. The Dodd-Frank Act 165 (h) also requires the Risk Committee established for publicly traded bank holding companies with asset no less than 10 billion and non-bank financial companies regulated by the Federal Reserve.[413] Since CCPs as SIFIs confront the too big to fail issue which is similar to that of banks and other financial institutions. The RMC as a regulatory approach required by the proposed rule of CFTC for each clearing organization is a counterpart in the enhanced requirement of financial regulation.

As to the risk management of CCP, the opinion of financial industries concurred that the financial expertises are more qualified as representatives in the risk management committee,[414] especially the members of CCP can provide a large amount of expertise in the market. As noted above, the lack of practical experience in managing risk is the weak point of independent directors. And there is a voice that the composition of board of financial institution devastated by the financial crisis is compliance with the regulatory requirement of independent directors, but these independent directors are careless of the decision of management and can not prevent the excessive risk-taking by financial institutions.[415] Whatever in the board or in the risk management committee of the board, the fact proves that many independent directors subordinate to the management decision rather than actually oversight the risk.

It argues that the financial expertises as independent directors are widely used in audit committee in the listed corporation, implementing the oversight role.[416] This is a misunderstanding of the functions of audit committee and that of risk management committee. The normal audit committee focuses on internal control

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[413] Dodd-Frank Act 165 (h) Risk Committee, https://www.law.cornell.edu/uscode/text/12/5365

[414] Grant Kirkpatrick, The Corporate Governance Lessons from the Financial Crisis, OECD 2009, https://www.oecd.org/finance/financial-markets/42229620.pdf

[415] The independence sacrifices competence, See Tan Zhong Xing, Stewardship in the interests of Systemic Stakeholders: Reconceptualizing the Means and Ends of Anglo- American Corporate Governance in the Wake of the Global Financial Crisis (2014) 9:2 Journal of Business& Technology Law 169-212

[416] Section 407 of Sarbanes-Oxley Act: a company will be required to annually disclose whether it has at least one "audit committee financial expert" on its audit committee, and if so, the name of the audit committee financial expert and whether the expert is independent of management.

and the financial report of the corporation which are mostly ex post oversight; in contrary, the risk management of a corporation, especially financial institution like CCP, requests the ex-ante identification of the credit risk and liquidation risk existed in the institution. In comparison to the normal financial institution, it is said that risks within CCP are brought by the members and users of the infrastructure and the loss are probably allocated between them. Hence the representatives of members in the risk committee as insiders are likely to cooperate and make the immediate choice with compounded information.

The special committee such as RMC are delegated to oversight risks at board level; The committee is playing more and more important role since the board of director meetings held several times a year are not enough to monitor the risk continuously. The board or the committees do not make the daily governance which is the responsibility of the CEO and other high executives. From the author's view, there are some concerns over the composition and the process implemented by RMC:

(1) Making a balance between the financial expertises and the independent directors in RMC is an essential issue. Except to the expertises from members who are insiders and obtain more information of the big financial institutions; these people are current market participants who can identify and manage the risks more accurately because they are now in the position.[417] However, the independent directors can supervise other activities of directors that impair the benefit of the corporation. In the case of CCP, the provision of margin supports the whole process of CCP, if the RMC with majority financial experts are incline to take more risk rather than ask the members providing sufficient collateral, it endangers the CCP and the systemic risk caused by CCP can not be burdened by itself or several institutions. A proposal that the chairman of RMC is an independent director and the proportion of public directors

[417] The opinion given by Dave Olsen, global head of OTC clearing at JP morgen that the market knowledge of independent directors who are retired or soon-to retired participants begins to decay; after three or five years, these group are not refreshed to see the problems coming. https://www.ft.com/content/62cd3ed6-1a96-11e0-b100-00144feab49a

reduced seems a reasonable alternative,[418] since the user representative will also participate in the RMC.

(2) There are several opinions about the integration of risk management that the board and the RMC shall cooperate with the management to understand the risks, and they heavily depend on the information provided by management.[419] The reason is that the implementation of risk management is the task of executives such as CRO and CFO etc. If the directors of RMC are all public ones, they engage in their own business and are remote from the section of management. In this case, the breakdown of communication is caused by two reasons: one is that the board committee is at the high level and different executive departments are in charge of risk management work. However, the information loss is inevitable through this from bottom to top report process, from workers at different levels to CRO, CFO then to the board. [420] Under the organization theory, the employees in a corporate hierarchy system are reluctant to report to the senior the information that can increase the efficiency, since they will not get award directly from it.[421] They will also make involuntary information distort that benefit them. In addition, the larger the corporation with more hierarchy levels, the higher the information loss because of hierarchy.[422] Another is that the senior executives control and filter information; Because of this influence, the board or specific committees does not appreciate the risk with sufficient information. In the case of Enron's collapse, most people blame that the directors of Enron were fully informed but failed to discharge its

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[418] *Id.,* LCH.Clearnet, Comment for Proposed Rule 75 FR 63732; CME Group Inc. Comment No: 27266, 11/17/2010

[419] Murphy, Michael E., Assuring Responsible Risk Management in Banking: The Corporate Governance Dimension (2011). Delaware Journal of Corporate Law (DJCL), Vol. 36, No. 1, 2011. Available at SSRN: https://ssrn.com/abstract=1905484

[420] The Informational Deficiencies See note above, Grant Kirkpatrick, "Board simply review and approve the strategies proposed by management."; See note above, Tan Zhong Xing, there are two types of structural holes in information transmission , one is the absence of upward information flow. One is the informational monopolies

[421]Hennart JF. (1993) Control in Multinational Firms: the Role of Price and Hierarchy. In: Ghoshal S., Westney D.E. (eds) Organization Theory and the Multinational Corporation. Palgrave Macmillan, London, p.163

[422] *Id.,* Hennart JF. , p.163

responsibilities, while the committee did consider that they did not know the true status of the corporation.[423] In the financial crisis, information about exposure in a series of cases did not reach to the board even to the high executives,[424] which is a situation combining the first and second reason. Therefore, only the increasing number of the public directors will be insufficient if there is no integrated work.

(3) Whether the board should take the risk oversight duty is disputable. Under the definition of US regulators, the public directors have the same duty as the other directors. They take responsibilities at the occurrences of the breach of fiduciary duty that harms the benefits of corporation or shareholders. This duty is specific and the shareholders could sue the directors directly, this derivative suit means that the shareholders can represent the corporation against the directors. If it were a duty, the risk oversight here is more similar to the duty of care that the directors in the RMC could also be sued by directors. The corporate law traditionally provides protection to directors since the personal liability will dissuade qualified people from being directors; In the cases of *Caremark* and *Stone*, the court decided that the failure of monitor is hard to be proved by plaintiffs, since there is no "a sustained or systematic failure of the board to exercise oversight such as an utter failure to attempt to assure a reasonable information and reporting system exists—will establish the lack of good faith that is a necessary condition to liability" [425]. Except to the "failure to implement the information system or control" as an objective standard, the Delaware Supreme Court said that "directors consciously failed to monitor or oversees its operations thus disabling themselves from being informed of risks or problems requiring their

[423] Gerald Zandstra, (2002) "Enron, board governance and moral failings", Corporate Governance: The international journal of business in society, Vol. 2 Issue: 2, pp.16-19, https://doi.org/10.1108/14720700210430333
[424] Kirkpatrick, G. (2009), "The corporate governance lessons from the financial crisis", OECD Journal: Financial Market Trends, vol. 2009/1, http://dx.doi.org/10.1787/fmt-v2009-art3-en. page 2 and page 13 detailed illustration that a survey made by KPMG of 150 UK audit committee and 1000 world wide, only 38% of them were very satisfied with the risk reports they received from. management.
[425] In Re Caremark Int'l. Inc. Derivative Litation, 698 A.2d 959 (Del.Ch.1996)

attention.[426]" This "conscious failure" is a subjective standard and hard to prove.

After the financial crisis, the directors in different financial institutions from Citigroup to AIG was sued based on the failure to monitor the business risk under *caremake* rule. However, In these cases, the courts not only emphasizes on the subjective intention of directors that they have no liability when they do not have consciousness,[427] but also states that the risk management as a monitor of business risk is not in the context of oversight.[428] Therefore, if the failure of risk management will hard to result in director's responsibility upon the corporate law, the monitor role of public directors will much rely on their rationality.

It is a gradually formed opinion that the banks and the other systematically important financial institutions (SIFIs) shall make the balance or even subordinate the shareholder's wealth maximization to the customer protection and reduction of systemic risk.[429] As noted above, the public directors in the RMC may represent the aim of the regulator to monitor the risks of the financial institution at the board level. However, the public director's duty to the risk monitoring is hard to confirm under the corporate law and is not be entirely justified by the public regulations. Contrary to the corporate law, board range of US regulations from OCC, FDIC impose broad responsibilities on the directors of the financial institution. [430] Based on the reasoning that the most directors are expertises or have the qualified knowledge of the market, the public regulators tend to use a gross negligence rule to replace the business

[426] In Re Caremark Int'l. Inc. Derivative Litation, 698 A.2d 959 (Del.Ch.1996)
[427] In re Citigroup Inc Shareholder Derivative Litigation, 964 A.2d 106(Del.Ch.2009)
[428] Stone v. Ritter 911 A.2d 362 (Del.Supr.2006)
[429]the 2010 Dodd-Frank Act and a series of the EU regulations referred to Banks and the market infrastructure after the financial crisis
[430] See OCC director's book " the board is responsible for overseeing the design and implementation of the risk governance framework." https://www.occ.gov/publications/publications-by-type/other-publications-reports/the-directors-book.pdf; FDIC Statement concerning the Responsibilities of Bank Directors and officers https://www.fdic.gov/regulations/laws/rules/5000-3300.html

judgment rule and enhance the standard to make the business decision.[431] Now there is a conflict between the protection under corporation law and the liability imposed by public regulation. Otherwise, the board relies on the information provided by management to make a judgment, if the liability is too strict and no improvement of communication between management and board, the motivations of financial expertise to be the directors is undermined.

II. The governance rule in the context of EMIR

Compared to the limitation of voting rights and structural governance rules promulgated by US regulators, there are counterpart rules of the mitigation of conflict of interest in the EMIR. Concerning limiting the voting rights, no proportion restriction is prescribed in the EMIR; However, the acquisition of the voting right or the equity right of CCP, reaching or exceeding 10%, 20%, 30% or 50%, shall notify the competent authority of the CCP and the authority has the right to approve or oppose this acquisition.[432] It could be assumed from the text that the authorities in the EU permit the dealer group to get control of the CCP, yet they will assess the probability of conflicts of interest case by case.[433]

From the aspect of the basic structure of corporate governance refers to the senior management, board, and the members of special committees, the rules reflect the balance between expertise requirement and independent. From one side, Art. 27 EMIR prescribed that the senior management and the members of the board including independent member shall "be of sufficiently good repute and shall have sufficient experience" on the issues for which they are responsible.[434] From another side, there is also a general independent member

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[431] Jon Canfield, The Evolution of a more stringent Business Judgement Rule in Banking, The minimilization of Director Deference, 6 U.C. Davis Bus. L. J. 17 (2006). Available at https://blj.ucdavis.edu/archives/vol-6-no-2/the-evolution-of-a-more-stringent-business-judgment-rule-in-banking.html

[432] Art 31. 2, Art 31.5 EMIR

[433] Id, Art 32.1. (c) (d)" the competent auth ority…shall appraise …(c) whether the CCP will be able to comply and continue to comply with this Regulation." (d) when assessing…..with this regulation, the competent authority shall pay particular attention to whether the group of which it will become a part has a structure that makes it possible to exercise supervision, to effective exchange information among competent authorities"

[434] Art 27.1, 27.2 EMIR

requirement in Art 27 that "at least one third, but no less than two, of the members of that board shall be independent." Even though the EU accept the independent director in the corporate governance based on UK model,[435] the organization of CCP will in accordance with the national law of member states, for example, the corporation in Germany have a two-tier board rather than one tier. [436]

In a two-tier board system, the executive board composes of senior management; hence the independent requirement shall be imposed on the supervisory board.[437] Under the Art 27 EMIR, there should be at least one-third independent member in the supervisory board of CCP with dual level board. It shall be noticed that the non-executive members of the supervisory board is different from independent members. The former is not entirely neutral because some of them are employee representatives and some represents the banks, which has financial relationship with the corporation. In addition, it is said that German companies have the lowest proportion of independent member in the Europe and there is no compulsory requirement of the number of these members in German law.[438] From the analysis of the board organization of Germany, the impact of independent director in the board may be weaker since the different corporate governance structure of member states.

Concerning the Risk Committee, Art 28 EMIR requires that there shall be a Risk Committee that shall be made up of representatives of its clearing members, independent members of the board and representatives of its clients.[439] Except

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[435] Harald Baum, The Rise of the Independent Directors: A Historical and Comparative Perspective, Max Plank Institut for Comparative and International Private Law, Research Paper Series, No. 16/20, p. 25

[436] Art 3. 5 EU Nr. 153/2013

[437] 5.4.2 Deutscher Corporate Governance-Kodex „Dem Aufsichtsrat soll eine nach seiner Einschätzung angemessene Anzahl unabhängiger Mitglieder angehören. Ein Aufsichtsratsmitglied ist...nicht als unabhängig anzusehen, wenn es in einer persönlichen oder einer geschäftlichen Beziehung zu der Gesellschaft..." die geschäftliche Beziehungen besteht, wenn diese bedeutsam oder über die Grundvergütung hinaus vergütet sind. Heidel, Aktienrecht und Kapitalmarktrecht 4. Auflage, Nomos, p 2057. The members of management board have business relationship with the corporation.

[438] *Id.,* 5.4.2 DCGK, Harald Baum, p.28

[439] Art 28.1 EMIR

the members above noted, the employees of CCP, independent external experts and competent authority shall be asked to attend the risk committee meeting with non-voting capacity.[440] The role of Risk Committee based upon EMIR provides advice to the board concerning the issues that may impact risk management of CCP.[441] From the text of EMIR, unlike the proposed rule in the US, the Risk Committee seems more like an advisory board rather than the risk committee at board level.

The most distinct difference between the advisory board and the specific committee with the board of directors is that the advisors do not have any fiduciary responsibilities.[442] Art 4 of the technical standards of EMIR clarifies that the board shall assume final responsibility and accountability for managing the CCP risks.[443]However, the advice of RC is not binding, but it shall report to the competent authority if the decision of board is divergent from the advice of RC.[444]

Compared to the US rules, although the EMIR has independent member requirement, the expertise requirement mitigates the focus on independent members of the board, and the different board structure in member states, such as two- tiered board structure, will limit the independent members' ability to make the decision. As to the core issue of risk management in CCP, EMIR does not choose to add a new subcommittee of the board changing the board's internal structure. It requires the CCP to set up an independent board that composes of representatives of different interested parties, particularly clearing members and their clients, to promote the free information exchange between parties and mitigate the potential conflict of interests.

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[440] Art 28.1 EMIR
[441] Art 28.3 EMIR
[442] For example, in §12 Eurex Statutes for the EMIR Risk Committee" No EMIR Risk Committee Member shall, to the extent legally possible, owe any fiduciary duty (Treuepflichten) or other duties to protect (Schutzpflichten) Eurex AG, the shareholders of Eurex AG..... „ http://www.eurexclearing.com/blob/274198/0e1ef0e06df3db68425f8e205d5f48b1/data/04_01_statutes_emir-risk-committee_en_2016_06_20.pdf
[443] Art 4.3 EU Nr. 153/2013
[444] Art 28.5 EMIR

Another important issue here is imposing more liability of directors to the CCP and to achieving its goal as FMI to prevent systemic risk. According to the US model, it seems that the public directors have direct responsibility for the oversight, which is deterrence to the careless decision, even though the responsibility to manage put more burden on the plaintiff to prove it. Besides, another limitation of using more independent director is that these directors sited at the high level of governance structure are hard to contact with different interested parties and their decisions including the risk management are largely depend on the information from management. In the regime of EU financial regulations, the clearinghouse in compliance with CRD IV has constituted the Audit and Risk Committee within the Board structure to advise on the issues of risk appetite, risk strategy, and the remuneration, affecting the inherent risk of the corporation.[445] The Risk Committee based upon EMIR who specifies on the cases affecting clearing members and clients can better ensure the independence of the committee and the communication efficiency between parities, avoiding the limitations existed in the (Eurex Clearing AG, 2016) internal corporate governance structure. The representatives of regulators who participate in the meeting of RC without voting right can promote the public interests consideration in the committee but no excessive intervention of the CCP's management.

D. A special framework out of the arrangement and internal governance of CCP—the resolution of CCP

I. The introduction of Recovery and Resolution

In the previous chapters, the functions of CCP and two primary legal mechanisms –the close-out netting and the collateral arrangement are comparatively analyzed based on the rules in different legal jurisdictions, basically the US, UK, and EU. As commented by some scholars, the CCP during the financial crisis operates smoothly in the opposite of the failed financial institutions and its role is recognized by the market and regulators. Based on the recognition of the

[445] Art 76, Directive 2013/36/EU (CRD)

effectiveness of default management by CCP rules, the analysis of the legal support of CCP takes half part of the whole thesis, because the operation of CCP is mainly established on the validity of contract arrangement between CCP and its clearing members. The legal protection of CCP will improve the customer protection and prevent the contagion effect. The above perspective draws a conclusion that the CCP shall be as a private regime to participate in the market. Returning to the corporate governance of clearing organization, It points out that an efficient internal governance will not only mitigate the conflicts of interests and restrain the excessive risk-taking in the daily operation of CCP, but also maintain its resilience if the clearing member is in default. The solution for the "too big to fail" of CCP is also called recovery and resolution regime which is analogous to the BRRD (Bank Recovery and Resolution Directive). The CCP itself implements the recovery process which becomes part of operating rules of CCP, whereas the resolution regime is an overriding process—a government interrupted method rather than the default management as an inward function of CCP.

To smooth over losses caused by the participant default or other losses by the use of recovery tools and to survive the CCP is called the recovery process.[446] The essence of the process is the ex-ante agreement called recovery plan in which the different scenarios triggering recovery are dealt with various tools.[447] Even though specific situations[448] cause the recovery process, all the circumstances has one character that the CCP is in the extreme, threatening situation, but its functions continue by the implementation of recovery plan.[449] At the international level, The CPSS-IOSCO provides guidance on the previous recovery planning and the recovery tools utilized in the process. During normal operation, the board of CCP and its management are responsible for using the stress test, which is fundamental to the risk management, for the credit risks and

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[446] This definition could be summerized from CPMI-IOSCO report, Recovery of financial market infrastructures, Oct 2014, page 1, http://www.bis.org/cpmi/publ/d121.pdf; ESMA71-99-372, Statement on Recovery and Resolution of CCPs, Steven Maijoor points out that the EU Recovery and Resolution proposal is consistent with international guidence provided by CPMI-IOSCO on Recovery,page 2

[447] *Id.*

[448] 3.21-3.25 CPMI-IOSCO Recovery of financial market infrastructure

[449] *Id.,* 2.21 CPMI-IOSCO Recovery of financial market infrastructure

liquidity risks.[450] At the same time, CCP shall keep pre-funded financial resources e.g. margin to cover its credit exposure on an ongoing basis.[451] Whereas in a situation that may cause the failure of CCP, the specific tools that are commensurate with the different risks shall be applied. The CPMI-IOSCO report describes the tools designed to losses caused by participant default, uncovered liquidity shortfalls, and the tools to allocate losses between members.[452] Otherwise, the continued CCP also needs tools to replenish financial resources and to re-establish a matched book.[453] It shall be noticed that CCP's board will determine the daily risk management or the applicability of recovery tools in certain extreme circumstances.[454] In the two relevant international report above mentioned, they emphasize the governance of CCP and the specific tools rather than the role of the authorities. However, it does not mean that the authorities will do nothing in the recovery process, the Authority with responsibility for an FMI should periodically assess the adequacy of the recovery plan.[455] Although the implementation of recovery plan relies on CCP itself, the authorities could use administrative measures to ensure the effective implementation.[456]

Since the mandatory clearing concentrates the risk in the CCP, it is possible that the default management of CCP can not recover this institution from the default of its members or the competition between the members limits their capacities to take care of the risk. It results that a resolution of CCP as a backup mechanism,

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[450] 3.1.1 of the Resilience and recovery of central counterparties: Further guidance on the PFMI, August 2016, https://www.bis.org/cpmi/publ/d163.htm; The credit risk may caused by its counterparty and the liquidity risks are often caused by other reasons such as legal risks, operational risks, investment losses, or failure of custodian.

[451] 4.1.1 of the Resilience and recovery of central counterparties

[452] 4.2, 4.3, 4.6, CPMI-IOSCO Recovery of financial market infrastructure

[453] 4.4, 4.5, CPMI-IOSCO Recovery of financial market infrastructure

[454] 2.2.9 and 2.2.11 of the Resilience and recovery of central counterparties, The board should determine the amount of a CCP's own contribution to absorb potential losses resulting from a participant default, and it can also limit the destabilizing, procyclical changes in the overall quantity of financial resources collected from direct participants. These limitations include tools such as collateral haircut

[455] 2.52 The role of the authorities in recovery, CPMI-IOSCO Recovery of financial market infrastructure

[456] *Id.,* 2.56,2.57

which is intervened by regulators, is an important task confronted by authorities in the different jurisdiction.[457]

The key attributes of FSB (Financial Stability Board) prescribed that "the financial market infrastructure should be subject to resolution regimes and the choice of resolution powers should be guided by the need to maintain continuity of critical FMI functions." It means that the clearing function of CCP shall not break down.[458] As to the Resolution authority, "each jurisdiction should have a designated administrative authority or authorities responsible for exercising the resolution power over firms within the scope the resolution regime."[459]

Since the failure of the systemic important financial institution may strongly impair the financial stability at the international level, the resolution authority has wide authority to take measures such as removing or replacing the senior management, transfer of assets and ability, using bridge institution to continue the function, bail in within resolution, etc.[460] The recent discussion of this issue focuses on the methods themselves rather than who exercises power. At the EU level, the reformation of European Supervisory Authority after the financial crisis is aimed at tackling the shortcomings of EU financial regulations[461], and a single authority established by EU legislation may pursue this goal more effectively. However, the national competent authorities hold the opinion that the formal authority for the resolution of CCP is national, which depends on the incorporation of CCP because the "fiscal backstop against the unsuccessful resolution of CCP is still a national state."[462]

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[457] Andrew Gracie, speeach Bank of England "CCP resolution and the ending Too big to fail agenda," https://www.bankofengland.co.uk/speech/2015/ccp-resolution-and-the-ending-too-big-to-fail-agenda, "Thus not only do we have to ensure that the level of supervisory intensity matches the risks, something my supervisory colleagues are very focus on, we must also address the issue of what should happen if a CCP were to fail."
[458] 1.2 Key Attributes of Effective Resolution Regimes for Financial Institutions http://www.fsb.org/what-we-do/policy-development/effective-resolution-regimes-and-policies/key-attributes-of-effective-resolution-regimes-for-financial-institutions/#1scope
[459] *Id.,* 2.1
[460] *Id.,* 3.2 General resolution power
[461] (1), (2) Regulation (EU) 1095/2010 establishing a European Supervisory Authority
[462] *Id.,* CCP resolution and the ending Too big to fail agenda, p.3

II. no single mechanism for the resolution on CCP in the context of macro prudential supervision at the EU level

The resolution of a financial institution can be separated from the micro supervision but included in the tools of macro prudential supervision. The micro supervision also called the day-to-day supervision is led by the different competent authorities such as a national central bank, or a special supervisory authority like BaFin in Germany. The supervision functions include the administrative monitoring and implementation of the regulation. On the contrary, the resolution regime only applies to CCP to the extent that the default management of CCP is unsustainable. Broadly speaking, the resolution tools taken during that period can be seen as a part of macro –prudential supervisory, since this approach "recognizes the financial system as a whole and involves the monitoring, assessment and mitigation of systemic risk, namely the likelihood of failure of a significant part of the financial system."[463] Therefore, the resolution on CCP can be included in this broad supervision regime and as a complement to the micro prudential supervision.

If the resolution harmonizes with the day-to-day supervision, the approach of the single supervisory mechanism (SSM) and the single resolution mechanism (SRM) seems more efficient, because the oversight financial institution in different phases is at the same level. The representation of this model is that ECB is authorized to supervise all systemically important banks.[464] ECB oversees the banking supervision by a wide range of day-to-day supervision reviews, taking supervisory and corrective measures and ensuring the consistent application of regulations and supervisory policies.[465] In 2013, as to the resolution mechanism, ECB published its opinion on the SRM and held that a single authority with

[463] Speech by Lucas Papademos, "Financial stability and macro-prudential supervision: objectives, instruments and the role of the ECB", Semptember 4th, 2009 https://www.ecb.europa.eu/press/key/date/2009/html/sp090904_3.en.html
[464] 125 significant entities is supervised by ECB, https://www.bankingsupervision.europa.eu/banking/list/who/html/index.en.html
[465] The role of ECB, ECB official website: https://www.bankingsupervision.europa.eu/about/thessm/html/index.en.html

decision-making power contained but the supervisory and resolution authorities are separated based on the accountability reason.[466]

Finally, the SRM regulation was adopted by the Parliament in 2014, and a Single Resolution Board (SRB) is founded based upon the regulation. It applies to the financial institutions included but not limited to the ECB/SSM system,[467] The primary tasks of SRB are to assess the conditions to put a bank into resolution and decide the tools used through the resolution plan.[468] Even though the Council of the European Union or Commission due to the request from the Commission has the right to object the resolution scheme, the SRB to which is still endowed a wide range of decision powers, such as the adoption of resolution schemes, leads the resolution process.[469] In consideration of resolvability, the ECB still has a significant impact on the decision to take the resolution.[470]

Referred to the CCP's resolution mechanism, the EU Commission has published the proposal on Recovery and Resolution Regulation for CCPs in November 2016. It clarifies that this is also a complement to the existed resolution framework of banks and financial institutions, but a tailored one aimed at the business model and the specific risks taken by the CCP.[471] Besides, the resolution regulation at the EU-level addresses the issue that different rules adopted by member states will impair the effect of resolution.[472] In this case, however, the resolution authorities are at the national levels such as central banks or competent supervisory authorities of CCPs.[473] Except to the resolution competent authority,

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[466] ECB's opinion on the single resolution regime (08.11.2013) http://www.ecb.europa.eu/press/pr/date/2013/html/pr131108.en.html

[467] The Single Resolution Mechanism, Introduction to Resolution Planning, 1.3, SRB can also exercise its power to banks that are originally within an NRA remit https://srb.europa.eu/sites/srbsite/files/intro_resplanning.pdf.pdf

[468] Id., 1.43, 1.44

[469] Art 18.7.8.9, Resolution procedure, Regulation (EU) No 806/2014 on the Single Resolution Mechanism

[470] (5) MoU between the ECB and SRB, https://srb.europa.eu/sites/srbsite/files/en_mou_ecb_srb_cooperation_information_exchange_f_sign_.pdf

[471] 1.2 COM/2016/0856 final-2016/0365 (COD)

[472] *Id.,* 2.1

[473] *Id.,* Art. 3

the resolution colleges will be set up in CCPs corresponding to the EMIR college.[474]

The EMIR college regime is a platform to facilitate the information exchange between different member states rather than to take charge of the day-to-day supervision,[475] which is a task of the national competent authority. Under this model, the ESMA as a party in interest will participate in the college without voting right.[476] The college regime shall reach the joint opinion determining the risk assessment and other requirements to the CCP following the regulation.[477] ESMA takes a coordinate role in this cooperation model and has a weaker impact on the supervisory issues of CCPs compared to ECB's supervisory power to SIBs (system important banks). This model also applies to the establishment of the resolution colleges of CCPs.

The Resolution Authority in the proposal shall be designated by the member states and can be different from the competent authority of CCP. The Authority will also establish a resolution college to cooperatively carry out the tasks including drawing up the resolution plans, assessing the resolvability of the CCPs, and addressing impediments to resolvability.[478] The most frequent word appeared in these articles is cooperation. Typical examples are cooperation between resolution authority and competent authority in the resolution college and between the resolution authority and resolution college in the assessment of resolvability to make the joint decision. However, in the resolution regime of Banks, the SRB has the decision power, and the member states have auxiliary effect through the representatives with voting rights on that board.

Even though there is no single mechanism for resolving the resolution of CCP, the ESMA has a certain power during the cooperation process with NRAs

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[474] *Id.,* Art.4
[475] Art. 5 Regulation on regulatory technical standards on colleges for central counterparties (876/2013/EU)
[476] Luisa R. Geiling, Central counterparties: Supervisory colleges under EMIR, Expert Article, BaFin
https://www.bafin.de/SharedDocs/Veroeffentlichungen/DE/Fachartikel/2016/fa_bj_1603_zentrale_gegenparteien.html
[477] Art 19. 49 EMIR
[478] Art13, Art16, Art17 COM/2016/0856 final-2016/0365 (COD)

(National Resolution Authorities). The decision powers of ESMA includes excising the binding mediation and making decisions when the supervisory college or the resolution college does not reach the joint opinion and providing the opinion on the suspension of clearing obligation.[479] ESMA's power is not out of the scope that delegated under the regulation. It can take a decision requiring the competent authorities to take specific action or refrain from action to settle the disagreement between these authorities in cross-border situations.[480] Nevertheless, the trigger of ESMA's binding mediation role is subject to strict conditions. In the case of CCP's authorization, ESMA will involve only when a majority of two-thirds of the college have expressed a negative opinion or any of the competent authorities concerned, based on that two-thirds negative opinion, refers the issue to the ESMA.[481] In the recent report of ESMA, it expresses concern that the two-third majority under EMIR has never reached and the resolution college hold many aspects of members which may have the conflict of interests between the home country of clearing member and the country authorized the CCP.[482]

Since the resolution regime has close ties with the supervision, the expansion of the supervisory power of EU agencies such as ESMA shall also be scrutinized under the treaty and case law. Firstly, there was a controversy over Art 114 TFEU as the appropriate legal basis for establishing EU agencies.[483] After a consequence of case law, the Court of Justice in ENISA confirms that "the Community legislature considered that the establishment of a community body such as the Agency was an appropriate means for preventing the emergence of disparities likely to create obstacles to the smooth functioning of the internal

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479 Art 18.4 COM/2016/0856 final-2016/0365 (COD)

480 Art 19, Art 21(4) Regulation (EU) No 1095/2010, Normally ESMA performs its coordination function, carrying out non binding mediation upon a request from the competent authority or on its own initiative based upon Art 31.

481 Art 17.4 EMIR

482 ESMA opinion on European Commission's Proposal for EU regulation on CCP Recovery and Resolution, para 26, ESMA 70-151-222, 05 April 2017, https://www.esma.europa.eu/sites/default/files/library/esma70-151-222_esma_opinion_on_ccp_rr_0.pdf

483 Section B.1, Opinion of Advocate General JÄÄSKINEN delivered on 12 September 2013 (1) Case C-270/12, United Kingdom of Greate Britain and Northern Ireland v European Parliament and Council of the European Union

market in the area." [484] The situation of previous cases can be references because tasks will confer on ESMA after the regulation of resolution passed by the parliament.

In the case C-720/12, United Kingdom v European Parliament and Council 2014, whether Art 114 TFEU is an appropriate legal basis for ESMA's power to prohibit or impose conditions on short selling is challenged by the UK.[485] This issue concerns whether the ESMA has specific decision-making power rather than its establishment according to the Art 114 TFEU. The ESMA's intervention power includes not only the Art 28 of the short selling regulation but also powers upon Art 17, 18, 19 under ESMA regulation.[486] In the opinion of Advocate General Jääskinen, the ESMA's intervention power is a substitute of NCA's decision rather than promoting harmonization.[487] In his opinion, the only disparities between countries or an obscure risk that threatens the internal market, resorting to Art 114 as legal basis, will squeeze out the judicial review of the application of the proper legal basis.[488] This view can apply to the ESMA's binding mediation here. As to the ESMA's binding mediation power of the resolution issues, The proposed resolution regulation based upon Art 114 TFEU ensures that CCPs "are subject to same tools and procedures to address their possible distress of failures." [489] However, the ESMA's decision here inclines to mitigate the differences between the national handlings of the failure of CCP rather than substitute an NCA's decision. The dispute may arise because of the regulatory competition that the market participants favor a CCP locating in a place where have strong backing from the state, but the ESMA supports the effective implementation of resolution regulation to the CCP by avoiding the competitive distortion and the different cost depending on the geographic location.

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[484] *Id.,* para 30; para 62, Case C-217/04, United Kingdom v Parliament and Council
[485] Case C-270/12, United Kingdom of Greate Britain and Northern Ireland v European Parliament and Council of the European Union
[486] ESMA has certain decision power in the circumstances of breach of Union law (Art 17), in emergency situations (Art 18), Settlement of disagreements between competent authorities in cross-border situations (Art 19)
[487]para 40, Opinion of Advocate General JÄÄSKINEN, Case C-270/12
[488] *Id,.* para 46
[489] 2.1 COM/2016/0856 final-2016/0365 (COD)

Besides, the boundaries of power conferred on ESMA are contested by the case law meroni.[490] The binding mediation power has the similar effect with the decision power. It is discretional and may have the fiscal impact on the member states especially in the sphere of systemically financial institutions and market infrastructures. In Meroni, "the discretionary power, implying a wide margin of discretion which may, according to the use which is made of it, make possible the execution of actual economic policy."[491] This power could not be delegated to a European agent. In the case of the resolution of CCP, the choose of resolution tools used by authorities certainly impact the property rights of the CCP and other market participants; even worse, the inappropriate decision may cause a spill-over effect which will be eventually undertaken by the member states. Even though ESMA's power does not extend to the loss-allocation tools, the proposal prescribed that its binding powers are implemented in using the bridge CCP tools based upon the Art 18.4 of the proposed regulation.[492] Since the regulation does not prescribe in what circumstances to use which tools, the ESMA has the discretion to decide whether to change the legal or operate structure of CCP, raising the legal risk that the discretion power will be challenged by the national states based upon the case Meroni.

The above concerns reflect the dilemma between the efficiency and the legality. The decision of the case between UK and EU authorities inclines to protect the ESMA's power to "prohibit or restrict certain financial activities that threaten the orderly functioning and integrity of the financial market or the stability of the whole or part of the financial system in the Union."[493] Under the logic of judgment of the Case C-270/12, the excise of ESMA's power is not discretionary because the formal restrictions run through the binding mediation process.[494] As mentioned before, the precondition to initiating the mediation is the negative

[490] para 29, the argument of UK in Case C-270/12, United Kingdom of Greate Britain and Northern Ireland v European Parliament and Council of the European Union
[491] Case 9/56, Meroni & Co., Industrie Metallurgiche, SpA v High Authority of the European Coal and Steel Community, at 152, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A61956CJ0009
[492] Art 17.7 (j), (k), (n) COM/2016/0856 final-2016/0365 (COD)
[493] Art 9 (5) ESMA Regulation (EU) 1095/2010, the legal basis background of the case, para 7
[494] The court's assessment in the case, at para 45 " the exercise of the powers under Article 28 of Regulation No 236/2012 is circumscribed by various conditions and criteria which limit ESMA's discretion."

opinion of the two-thirds of the college. Besides, the priority aim in the settlement process is reaching the agreement between disputed NCAs, if not, the ESMA shall make a decision. The NCAs participate in the mediation process, and the panel that is constituted of ESMA's chairman and two members of the board of supervisors will hear the opinions of authorities.[495] Even though the ESMA's decision shall prevail over the decision adopted by NCAs,[496] the decision shall be adopted by the simple majority,[497] and the most important restriction is that no decision taken under Art 19 of ESMA regulation is with prejudice to the fiscal responsibilities of the member states. The competent authority will notify ESMA and the Commission that it will not implement the ESMA's decision based upon Art 19.

Nevertheless, it lacks the standard to define the fiscal responsibilities of a state and the degree of ESMA's discretionary power. The prohibition of short-selling by ESMA will impact the sovereign CDS transaction and damage the liquidity of some member states. It is foreseeable that the failure of CCP with many cross-border transactions may pose a larger risk than the ban on short sale. However, in the resolution regime, the damage shall be a probable danger rather than the one happened. The state shall take the burden to explain "why and how the decision impinges on its fiscal responsibilities".[498] As to the discretionary power of ESMA, the formal procedure process of the decision is not completely equivalent to circumscribed discretion, because the panel's decision is made independently and the council will review the decision on the condition that the impingement on the fiscal responsibilities asserted by the member states.[499]

It would be more probably that ESMA will limit its discretionary power de facto to avoid the notification right raised by the state. The mediation role of ESMA is aimed to resolve the disputes between member states effectively and to ensure the success of the resolution. A successful resolution will not burden on the fiscal responsibilities of a state, since it will not resort to government bailout. If the

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[495] Mediation process of ESMA, https://www.esma.europa.eu/convergence/mediation
[496] Art.19 (5) ESMA Regulation (EU) 1095/2010
[497] I*d.,* Art 44. 1
[498] Art.38 ESMA Regulation (EU) 1095/2010
[499] *Id.,* Art 38

national authority explains the impingement clearly and specifically, it would be high probable that the resolution will fail because of the EMSA's binding decision. Therefore, the ground that ESMA's mediation decision will promote the efficiency of resolution is not in existence. From the above, the ESMA's power is strictly limited to the procedures prescribed in the regulation and the bottom line is without impacting the fiscal responsibility.

Another opinion put forward by some professionals that the single supervisory of CCP is a method more effective than the fragmented national regulation.[500] However, the ESMA as an agency established by the secondary law can not be granted expanding right as a single supervisory authority, which makes it not as independent as ECB established by the Treaty of European Union.[501] The supervision task conferred to ECB is prescribed in the Art 127 (6) TFEU, although the ECB get a limited supervisory power.[502] As to ESMA, the Meroni issue considered in the ESMA's power will not be an obstacle based on the treaty. The ESMA's binding mediation power is welcomed to cross-border issues, but the institution being a centralized supervisory or resolution authority is lack of a specific legal basis. Besides, the CCP's resolution and its possibility to access the national central bank's liquidity affects the fiscal responsibility of a member state as well.

III. The resolution mechanism backed by the implementation of financial stabilization tools

The resolution authority will mainly apply two types of bail-in tools to prevent the contagion risk caused by the failure of the CCP. One is the reorganization

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[500]Jan Pieter Krahnen-Loriana Pelizzon "Predatory Margins and Regulation and Supervision of Central Counterparty Clearing Houses (CCPs), SAFE White Paper No.41, http://safefrankfurt.de/fileadmin/user_upload/editor_common/Policy_Center/Krahnen_Pelizzon_CCP.pdf

[501]Art 3, Art 13 of the Treaty on European Union (TEU)

[502] the Art 127 (6) prescribed that" The Council...may....confer specific tasks upon the European Central Bank concerning policies relating to the supervision of credit institutions." It means that ECB has no wider powers including bank resolution , oversight of financial conglomerates or investment firms not defined as credit or other financial institutions. Kern Alexander, European Banking Union: a legal and institutional analysis of the Single Supervisory Mechanism and the Single Resolution Mechanism, E.L.Rev.2015, 40(2), 154-187

tools including write down and the conversion of debt to equity. [503] Another is the sale of business tools to find a purchaser or to establish a bridge CCP, accepting the remaining assets or the equity instrument issued by the CCP.[504] These tools help to keep the continuity of the CCP's function and are the similar tools used in the bank resolution. Since the CCPs do not have many subsidiaries as the banks, the cross-border asset transfer of the CCP itself is not that much, but the debt of it as a contractual issue is probably subject to the law of another jurisdiction.[505] From this perspective, the guidelines and the legislative act of the CCP resolution at the international level is necessary, admitting the resolution tools implemented by the resolution authority and mitigating the discrimination of creditors. [506]

Besides, one practical reason to support the resolution led by the resolution authority in the member state where the CCP established is the possibility that the resolution mechanism will not prevent the risk. Each country, not only countries in the EU, will provide bail-out tools to stabilize its financial market, avoiding the unsettlement of one financial market spread to markets of other nations. In the resolution mechanism, the resolution authority in a state has wide power to use bail in tools and is not required to get approval or consent from any public or private person. However, in the case of using financial stability tools, the competent ministry and the government with the resolution authority, after consulting the central bank or the competent authority, will decide to apply public recapitalization tools or public ownership tools to bail out the CCP as a last resort.[507] Since there is no single resolution mechanism beyond nations to exercise power, the government may choose to ignore the resolution based upon EU regulation and use taxpayers' money to ensure its interest. The recent bailout of two midsized Italian bank testified that the bank recovery and resolution

[503] Section 3, Art 32-39, COM/2016/0856 final-2016/0365 (COD)
[504] Section 4, Art 40, 41, COM/2016/0856 final-2016/0365 (COD)
[505] the clearing contract terms will in line with the member states in the EU or the third country like US.
[506] 1.1.2 COM/2016/0856 final-2016/0365 (COD)
[507],Section 7, Art 45 Government Stabilisation tools COM/2016/0856 final-2016/0365 (COD)

directive is hampered by the state's political interest.[508] In contrast, the bail-in process of the Spanish lender Banco Popular is successful.[509] Even though the single resolution scheme of the Bank Union and the SRB as the resolution authority are established at the EU level, the obedience of the new resolution mechanism is still unforeseeable. After the implementation of mandatory clearing, the CCP is more complex and interconnected than a single bank. Furthermore, no supernational institution can legally lead the resolution mechanism of the CCPs. The universal guidelines and the EU legislative agency as an active player in the resolution regime will have the positive impact on the cooperation between different states on the one hand, but the financial interests are divergent among the countries. Hence, the foundation of a unified resolution mechanism and a resolution fund for the CCP still need a long way to go.

E. Summary

The governance of CCP after the financial crisis is based upon the rationale that those who bear the risk would prefer to control the risk.[510] The design of the structure governance shall consider the interests of different participants but put the preventing of systemic risk in the financial market in the first place. The independent directors who traditionally take the supervisory role have limited capacity to promote the risk management in the demutualized CCP. A risk committee composed of representatives of the non-executive body, of clearing members and clients, and attended by expertises and representatives of authorities will facilitate the information change and more effective management. The strengthening of internal governance is priority, because the CCPs have close relationship with their clearing members, the cooperation between them can promote the resilience of CCP and achieve the public interest indirectly. Once a CCP fails, the loss allocation will give huge pressure to the non-default

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[508] European Commision- Press release State aid: Commision approves aid for market exit of Banca Popolare di Vicenza and Veneto Banca under Italian insolvency law, involving sale some parts to Intesa Sanpolo http://europa.eu/rapid/press-release_IP-17-1791_en.htm

[509] European Commision- Press release European Commission approves resolution of Banco Popular Espanol, S.A. http://europa.eu/rapid/press-release_IP-17-1556_en.htm

[510] IMF working paper WP/15/21, Froukelien Wendt, Central Counterparties: Addressing their too important to fail nature, p19, IMF working paper WP/15/21, https://www.imf.org/external/pubs/ft/wp/2015/wp1521.pdf

members and the resolution regime is actually an exception to rescue a failure financial infrastructure. If the liquidation of the CCP is in line with a national insolvency law, to what extent the clearing arrangement between the CCP and its clearing member can be enforced depends on the insolvency procedures in different countries. Besides, the state may decide to bailout the infrastructure concerning the failure impact on its domestic market, using taxpayers' money is an unavoidable result. In the case of the governance of CCP, the prevention is more practical than the remedy.

Conclusion

The debt crisis has passed nearly ten years and the re-regulation of financial market led by different authorities is still work in progress. The thesis tries to figure out whether the CCP should apply to the OTC derivative contracts, which is an unregulated area before the global financial crisis. The OTC derivative contracts were once seen as the product of financial innovation and regulators were blamed for intervening too much in the financial market whose smoothly operation is based upon the theory of market efficiency and rational behavior of the financial market participants.

However, the global financial crisis testifies that the area shall be regulated, especially the game players of these contracts. The reason is simple: the users rather than the tools have the credibility problem. In theory, the CCP as the risk manager rather than the risk taker can mutualize the risk through its unique mechanism and manage the credit risks of its members.

Through the analysis of the mechanism, the CCP can take the role as an appropriate self-regulatory organization to fill in the gaps between the public regulators and the market participants. Since the use of CCP is a long time history, the standardization of derivative contract, the close-out netting system and the margin arrangement have been recognized by the financial market participants, the expansion of central clearing coincides with the standpoint that the performance of the CCP is based upon the contract but also enhances the transparency of market and reflects the public interest.

Even though the CCP performs some self- regulation function, the organization of the CCP are corporations and many of which are controlled by the exchange or the big dealers. The opposite voice from the dealers that the higher transaction cost after the implementation of CCP shall be rationally treated because the burden of each members will reduce the potential risk that the loss of defaulted members will be allocated to all the non-default members. While the CCP which is not a normal corporation shall have special corporate governance structure to identify the potential risk, if there is no violation of compulsory rules, such as conflict of interest influencing the independent decisions made by the management or the staffs of the CCP,[511] the business judgment of the CCP's management shall be respected.

The CCP is responsible for the day to day management of clearing system and is accountable for the NCA. In the EU, the oversight of the CCP is now be based on the cooperation between the NCA and the ESMA, but the ECB strives to expand its power to regulate the CCP.[512] The most serious problem is the failure of the CCP, therefore the design of resolution regime through cooperation is essential to the stability of the financial market. Otherwise, the financial regulations in different specific area impact each other, hence the supervision of shadow bank system will promote the function of the CCP clearing in the overall financial market.

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[511] ESMA70-151-1094, Final Report Guidelines on CCP conflict of interest management, 5.2.2 Rules of conduct, https://www.esma.europa.eu/press-news/esma-news/esma-issues-conflict-interest-guidelines-ccps

[512] In the case T-496/11 UK v. ECB, at 110, ECB was denied to have competence to regulate the clearing system. From the analysis of the court's view by Evangelos Ananiadis-Bassias, Evangelos Ananiadis-Bassias,The ECB's "location policy" for central counterparties: is the General Court drawing a line, or taking one step back to take two steps forward? E.L. Rev. 2016, 41(1), 122-130, at 129 the ECB has the inherent justified power to regulate clearing system since close link between it and the payment system. This approach can be achieved by the amendment of Art 22. of ESCB statute, in 2017, the ECB recommends amending Article 22. https://www.ecb.europa.eu/press/pr/date/2017/html/ecb.pr170623.en.html

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