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**Credit-Default-Swaps and the 2008 Financial Crisis
--- The Underlying Legal Origins and the European
Union's Regulatory Reforms**

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Abstract

After the 2008 financial crisis, the financial innovation product Credit-Default-Swap (CDS) was widely blamed as the main cause of this crisis. CDS is one type of over-the-counter (OTC) traded derivatives. Before the crisis, the trading of CDS was very popular among the financial institutions. But meanwhile, excessive speculative CDSs transactions in a legal environment of scant regulation accumulated huge risks in the financial system. This dissertation is divided into three parts. In Part I, we discussed the primers of the CDSs and its market development, then we analyzed in detail the roles CDSs had played in this crisis based on economic studies. It is advanced that CDSs not just promoted the eruption of the crisis in 2007 but also exacerbated it in 2008. In part II, we asked ourselves what are the legal origins of this crisis in relation with CDSs, as we believe that financial instruments could only function, positive or negative, under certain legal institutional environment. After an in-depth inquiry, we observed that at least three traditional legal doctrines were eroded or circumvented by OTC derivatives. It is argued that the malfunction of these doctrines, on the one hand, facilitated the proliferation of speculative CDSs transactions; on the other hand, eroded the original risk-control legal mechanism. Therefore, the 2008 crisis could escalate rapidly into a global financial tsunami, which was out of control of the regulators. In Part III, we focused on the European Union's regulatory reform towards the OTC derivatives market. In specific, EU introduced mandatory central counterparty clearing obligation for qualified OTC derivatives, and requires that all OTC derivatives shall be reported to a trade repository. It is observable that EU's approach in re-regulating the derivatives market is different with the traditional administrative regulation, but aiming at constructing a new market infrastructure for OTC derivatives.

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Introduction

“Derivatives are financial weapons of mass destruction, carrying dangers that, while now latent, are potentially lethal.”¹

[Warren E. Buffet]

In the last forty years, the financial derivatives market has experienced exponential growth. The global derivatives market grew from 72 trillion dollars in 1998 to 684 trillion dollars in June 2008, as measured in notional amounts outstanding.² Meanwhile, a number of dizzying financial innovation products successively emerged, among which the Credit-Default-Swap (CDS) is the most stunning and controversial one. In retrospect, CDS was created around the mid-1990s. The banking industry claimed that CDS was a very useful tool for shifting burdensome credit risk off their balance sheet, and thus promoting the stability and efficiency of the financial system. Before the crisis, the trading of CDS was very popular among the financial institutions. It is estimated that, at the end of 2007, the CDS market had grown to a near-57 trillion-dollars market.³ However, beneath this apparent prosperity, huge risk had also been accumulated in the financial system. Just as Mr. Buffett predicted, CDSs turned out to be the “Financial Weapon of Mass Destruction,” which exploded the U.S. financial system in 2008 and caused a global financial tsunami.

As we have witnessed, in 2008 a number of famous Wall Street financial firms failed successively. Firstly, in March 2008, Bear Sterns was taken over by the JPMorgan on a fire-sale price due to its losses in derivatives trading, which precluded

¹ See Warren E. Buffett, “2002 Chairman’s letter – Berkshire Hathaway Inc.,” available at <http://www.berkshirehathaway.com/letters/2002pdf.pdf>, last visited on 13 March 2015.

² European Central Bank (ECB), “OTC Derivatives and Post-trading Infrastructures,” September 2009.

³ See Bank for International Settlements (BIS), “Triennial Central Bank Survey, Foreign exchange and derivatives market activity,” December 2007.

the 2008 financial crisis. Then, on 14 September, Merrill Lynch was emergently sold to the Bank of America. On 15 September, the Wall Street fourth biggest investment firm Lehman Brothers filed for bankruptcy protection. Just the following day, the world biggest insurance company American International Group (AIG) fell into liquidity crisis, and the U.S. government had to bail it out as AIG is “Too-Big-To-Fail.” The failure of all these firms is related with the losses in CDSs transactions. It is therefore that CDS suddenly became notorious and well-known to the public.

In order to prevent a next crisis resulted from the derivatives market, an in-depth analysis from both economic and legal perspective is justified. First of all, we shall figure out what roles CDSs actually played in this crisis? We consider that the answer to this question will become the founding corner of this dissertation, as the following legal researches are based on the result of this inquiry. Hence, in Part I, we are firstly going to analyze the relationship between the CDSs and the 2008 financial crisis.

Secondly, we believe that, although the CDS per se is risky, the underlying legal environment that governs the transactions of CDSs and other derivatives is the fundamental institutional reason of this crisis. In other words, CDS is a financial instrument, which likes other risky materials, is a sword of double-edge. If it is soundly utilized, it could benefit the society, while if abused, it would be detrimental to the society. In this sense, the deciding factor of the function of those risky materials lies in the method of using them. It is evidenced that, driven by the greedy of the financial institutions, speculation on CDSs dominated the derivatives market before the crisis. So, we are going to question that why CDSs was misused mainly as speculative tools? More specifically, which legal rules facilitated the excessive speculation on CDSs and other derivatives? Are these legal rules legitimate? Moreover, we observed that, in the crisis, the financial institutions often fell into insolvency in a very short time span. The extreme example is that the giant insurance company AIG exhausted its liquidity in less than a month. Hence, we are wondering that why the legal rules that prevent a systemically important financial institution from bankruptcy did not work? Furthermore, before the crisis, AIG sold out near 400

billion dollars notional value CDSs to various counterparties. Why could AIG sell out so many CDSs protections? If credit events happen, AIG should compensate to the CDSs protection buyers. It seemed that the counterparties did not worry about the creditworthiness of AIG. Then is there any underlying legal reason for this phenomenon? In Part II, we are going to answer these questions, based on a comprehensive inquiry into the legal rules relating to derivatives transactions. Although in this part, we will anchor our legal analysis on the U.S. laws, the laws of EU member states will be mentioned where relevant. In general, the U.S. derivatives laws could be seen as the paradigm and pioneer of de-regulation under the lobby of the derivatives industry.⁴

Thirdly, we also observed that after the 2008 financial crisis the main financial regulators have realized that in order to restore the stability and confidence of the financial system, it is necessary to re-regulate the derivatives market. In this dissertation, we will focus on European Union's regulatory reforms. In 2008, the G-20 was established to coordinate the regulatory response to the financial crisis. The main regulatory approaches towards re-regulating the derivatives market were developed in the G-20 meetings. Thus, the EU's regulations shall firstly be in line with its international commitments. To have a clear observation, we elaborated in detail the European Union's regulations in respect of the derivatives trading. But meanwhile we question that did the EU legislators completely noticed the problem of legal failures we analyzed in Part II? And could these newly enacted EU legislations prevent a next crisis resulted from the OTC derivatives market? In Part III, we are going to look into these questions.

⁴ See e.g., Edward R. Morrison & Joerg Riegel, "Financial contracts and the New bankruptcy code: insulating markets from bankrupt debtors and bankruptcy judges," Columbia Law School The Center for Law and Economic Studies Working Paper No. 291, 2006.

Part I CDSs and the 2008 Global Financial Crisis

Chapter 1 Credit Derivative Swaps and the Market Development before the Crisis

1. Definition, jargons and trading structure of CDSs

Credit Default Swap (CDS) was born as an instrument of “financial innovation” around the mid-1990s. In the financial market, it is commonly accepted that the first CDS was invented by Blythe Masters, who, at that time, was a banker in the derivatives team of JPMorgan.⁵ In 1994, JP Morgan had extended a credit line of 4.8 billion dollars to the energy company ExxonMobil Corp. Unfortunately, in that year, ExxonMobil was facing a 5-billion-dollar fine resulted from the “Exxon Valdez oil spill” disaster that happened in 1989. Thus, the creditworthiness of Exxon would be greatly affected. In order to tackle with the potential credit risk of Exxon, JP Morgan had to prepare a gross sum of risk capital reserve, which was too costly. In this circumstance, Blythe Masters advanced the idea of selling the credit risk of Exxon to other financial institutions who would like to assume. Finally, JP Morgan found the counterparty, i.e. the European Bank of Reconstruction and Development (EBRD). They signed the first credit risk shifting contract, which signifies the entering into practice of CDS. Through the risk transferring contract between JPMorgan and EBRD, the potential credit risk of one party was swiftly swapped to the other, the credit risk protection buyer paying the credit risk protection seller a sum of protection fees

⁵ See e.g. John Lanchester, “Outsmarted High Finance vs. Human Nature,” The New Yorker, available at <<http://www.newyorker.com/magazine/2009/06/01/outsmarted>>, (last visited on 31 October 2014).

calculated through sophisticated mathematic models,⁶ if the debtor of the original loan defaults the latter shall pay the prior off, otherwise, the latter would reap the protection fees. In this sense, the prominent derivatives law professor Frank Partnoy defines a CDS as “a private contract in which private parties bet on a debt issuer’s bankruptcy, default, or restructuring.”⁷

With the development of the CDS market, a bunch of jargons were formed in the financial marketplace. It is notable that the CDS had been becoming increasingly complex in the afterwards, notwithstanding, the set of jargons and the basic trading structure are still applicable to those more advanced CDS instruments. To best understand CDS, a “plain-vanilla CDS” could be seen as an “insurance contract” from the economic point of view.⁸ Therefore the professionals in the CDS market also developed the jargon system similar with those in the insurance industry. However, the derivatives industry endeavored not to call CDSs as insurance so as to avoiding regulation under insurance law.

In a typical CDS contract, the credit risk transfer is usually called the “protection buyer,” and the credit risk transferee is called the “protection seller.” The protection fee is named as “premium” or “risk spreads,” which will be paid on a quarterly basis until the CDS contract expires. The original debt is called “reference debt,” and correspondingly, the original debtor is called the “reference entity,” such as Exxon in the previous case. The incidents of reference entities’ default, bankruptcy or liquidation are direct threat to the benefit of credit risk protection buyers, which are in detail provided in the CDS contracts. And these incidents are named as “credit events.” The usage of these jargons were accepted and promoted by the OTC derivatives

⁶ See Brendan Sapien, “Financial Weapons of Mass Destruction: From Bucket Shops to Credit Default Swaps,” 19 Southern California Interdisciplinary Law Journal 411, p.419, (stating that “The bankers at J.P. Morgan, relying in the math and science skills of MIT and Cambridge graduates to deconstruct the credit risk they were carrying, created a complex financial instrument that effectively enables one party to transfer its credit risk exposure to another party.”)

⁷ This definition focuses on the economic essence of the CDS, see Frank Partnoy & David A. Skeel, Jr, “The Promise and Perils of Credit Derivatives,” University of Cincinnati Law Review Vol. 75, 2007, p.1021.

⁸ Rene M. Stulz, “Credit Default Swaps and the Credit Crisis,” Journal of Economic Perspectives, Vol.24, 2009, p.78

industry organization, i.e. International Swaps and Derivatives Association (ISDA), given that most of the CDS contracts are signed under the ISDA Master Agreement. In ISDA's several Master Agreements, these jargons were widely employed.⁹

The trading structure of CDS could already be perceived in the JPMorgan-EBRD contract, nevertheless, to further illustrate the CDS trading structure and also the jargons we just introduced above, it is useful to take a simple example. Assume that Lehman Brothers granted a \$1 billion 5-year loan to the General Motors (GM). After several months Lehman became worried about GM's ability of repaying the money back. For shifting the potential credit risk of GM, Lehman bought a CDS protection from the America International Group (AIG). So, Lehman is the "protection buyer" and AIG is the "protection seller." The \$ 1 billion loan between Lehman and GM is the "reference obligation," correspondingly GM becomes the "reference entity" of the CDS contract. If any credit event occurs before the CDS contract is due,¹⁰ AIG shall compensate the losses Lehman would have suffered in the reference debt.

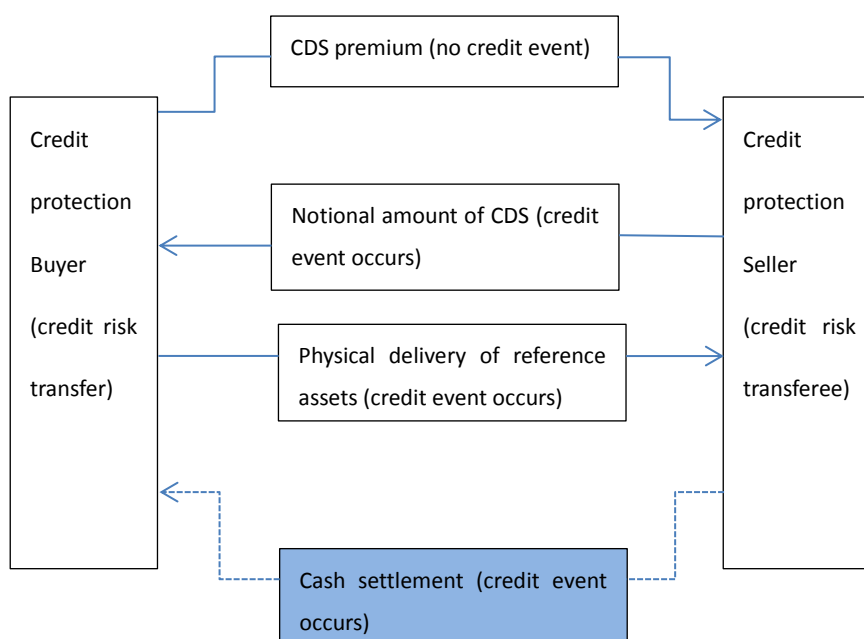
Regarding the compensation duty of the protection seller, there are two options that could be selected. One is "physical settlement," which means the credit protection buyer shall firstly deliver the ownership of the reference debt to the protection seller, and then the protection seller shall pay the notional amount of the reference debt to the former. In this case, the underlying "reference debt" shall be legally transferrable without the consent of the original debt issuer. Essentially, these transferrable debt instruments are securities, like corporate bond, government bond or asset-backed securities. And the traditional loan contracts are precluded. The other option is "cash settlement," under which the protection seller only needs to pay the protection buyer the losses of the reference debt, namely the difference between the notional value and the market value, and the protection buyer will retain the ownership of the reference debt. The second approach is more convenient for speculative transactions, as speculators could enter into the CDS market without really owning the underlying

⁹ As to the detailed content of ISDA Master Agreement, we will discuss in chapter 5.

¹⁰ The ISDA 2003 definition of "credit event" covers "bankruptcy", "failure to pay", "restructuring", "obligation acceleration", "obligation default" and "repudiation/moratorium".

debt instruments, and they do not need to buy them for delivering to the protection sellers when credit events happen. In this specific case above-mentioned, if GM defaults or bankrupts, AIG could only choose the “cash settlement.” And Lehman will claim the residual value of the loan to GM, or participate in the bankruptcy liquidation procedure of GM. The trading mechanism could be graphed in the following.

Charter 1: The structure of a basic CDS transaction



It shall be highlighted that the above-described trading structure of CDSs is only the basic version. With the continuous innovation of this market, CDSs instruments were becoming more and more complex, whose underlying reference obligations became extremely diversified, encompassing not just traditional loans and bonds, but also asset-backed securities and even financial indexes. Derivatives were also further combined with securitization techniques, making CDSs possess characteristics of freely tradable securities. These more complex CDSs will be discussed below. Nevertheless, they share the same basic structure with the plain-vanilla CDSs as we just illustrated.

The evolution of the derivatives, particularly the CDSs, radically changed the facade of the financial market. Since then, the different sectors of the financial industry, namely the equity, insurance and derivatives market, were tightly interconnected. Moreover, the newly innovated CDSs, such as Index CDS and Synthetic CDOs, greatly promoted the market liquidity of the CDSs market, and thereby facilitating the risk transfer of the banking industry. However, at the same time, excessive speculation also dominated this market due to these more innovative products, thereby huge risk accumulated in the financial system before the crisis.

2. CDSs and the relationship with other financial derivatives

Although we will argue that CDSs played an important role in the financial crisis of 2008, and other derivatives barely related to the breakout of the crisis, it is warrant to clarify the relationship between CDSs and other derivatives, provided that most of derivatives-aimed regulations after the crisis cover not only CDSs but almost all types of OTC traded derivatives. In the derivatives family, CDS is the newest species with a history of only around 20 years. In spite, CDSs share the same basic feature with other derivatives, namely, the value of which derives from the underlying assets. Actually, this is the reason why they are collectively called “derivatives.”

In retrospect, the fundamental elements of derivatives have been available for millennia, even if the modern financial derivatives are available for little more than a century.¹¹ The most ancient derivatives could be dated back to 1800 BC, when the Babylonians used derivatives contracts to bet on the fates of desert trading caravans.¹² In effective, the basic feature of these ancient derivative contracts is very similar with “wager contracts”, or, simply speaking, bets. But we could distinguish derivatives contracts from purely wager contracts, which we will argue below. Lately, historians have affirmed that around 1740 in Japan, exchange-traded derivatives, for instance,

¹¹ See Raffaele Scalcione, “The Derivatives Revolution: A Trapped Innovation and a Blueprint for Regulatory Reform,” Wolters Kluwer, 2011, p.3.

¹² Laurent L. Jacque, *Global Derivatives Debacles: From Theory to Malpractice*, World Scientific Publishing Company, 2010, p.4.

futures on rice, have already occurred,¹³ that is almost a hundred years before the surge of commodity exchanges in North America. In fact, from the outset, the underlying assets of derivatives are basically commodities, like wheat, beef, oil etc., thereby they are called commodity derivatives. Then, with the development of derivatives market, the underlying assets gradually diversified. Nowadays, almost all the assets could become the underlying assets of derivatives, only if they could be recognized by the market, ranging from tangible commodities to intangible financial indices and even the prediction to weather. Apart from the commodity derivatives, other derivatives are commonly categorized as “financial derivatives.”¹⁴ According to this standard of categorization, CDS is a kind of financial derivative that refers to the creditworthiness of the reference entities. Other financial derivatives mostly traded in the market include interest rate derivatives and foreign currency exchange derivatives. These three types of derivatives consist of the majority trading volume of OTC derivatives in the marketplace.

Apart from the categorization standard mentioned above, there is another important approach to differentiate the various derivative products. s. According difference of trading structures, derivatives are classified into four basic types, i.e. forwards, futures, swaps and options. Forward is the most primitive derivative contract, under which the seller agree to sell the underlying assets to the buyer on a fixed future date with the pre-determined price. For example, the farmer promises to sell 10 tons of rice to the miller in the fall with 1 dollar per kilogram. With this forward contract, the farmer and the miller are secured in terms of price volatility in the upcoming autumn, which is like buying protection policies for both parties. Futures are the standardized forward contracts, which are designed by the futures exchanges. It means that futures contracts are standardized commodity contracts with

¹³ See Ulrike Shaede, “Forwards and Futures in Tokugawa-period Japan: A New Perspective on the Dojima Rice Market,” 13 *Journal of Banking and Finance* 487, 1989, p.513. (Stating that “the historians have affirmed that around 1740 in Japan, exchange traded futures on rice had been usually traded.)

¹⁴ But with this regard, we shall be careful that the usage of the terminology of “financial derivatives” sometimes could also be extended to cover commodities.

fixed terms, including principal clauses of quantity, quality, price of the underlying assets and the maturity. After approved by the relevant regulators, future contracts could be traded on exchanges, the price of which will be fluctuated corresponding to the market demand. Standardized futures saved negotiation cost of private contract counterparties, meanwhile could become an investment product in bulk commodities due to its available liquidity. Options are the contracts, in which one party has the right to sell (“put option”) or buy (“call option”) the underlying assets on a fixed future date, and the other party could not decline the exertion of the put option or call option of the latter. But the option owner could waive his right. Lastly, Swaps are the contracts that the both contract parties trade cash flow streams according to the contractual terms in a certain period.¹⁵ Under this categorization framework, CDSs belong to swaps. As we observed, Forwards are traded off-the-exchange (or often said Over-the-Counter), futures are compulsorily traded on-the-exchange. Options and Swaps are traditionally privately negotiated and traded over-the-counter. However, standardized options and swaps could also be traded on-the-exchange or exchange-like electronic platforms.

After the 2008 crisis, financial derivatives were often widely criticized and blamed by the media as the main cause of this crisis. However, fairly speaking, this judgment is not precise, given that the exchange traded commodity futures and OTC traded interest rate derivatives and foreign exchange derivatives functioned well during the crisis, rather they, to some extent, promoted the stability of the financial market as they provided alternative risk-protection choices. The real problem of the derivatives market lies in the OTC traded CDSs, which provided a perverse stimulation to the securitization of subprime mortgages and the CDSs trading information is extremely opaque. This observation drove us focus on the research on CDSs, but as a whole, other OTC derivatives would also be referred in this dissertation where relevant.

¹⁵ See Timothy P. W. Sullivan, “Swapped Disincentives: Will Clearinghouses Mitigate the Unintended Effects of the Bankruptcy Code’s Swap Exemptions?” 80 *Fordham Law Review* 1491, 2011, p. 1495.

3. Main types of CDSs

By virtue of continued innovation and advanced technology, CDSs themselves have also undergone a string of upgrades. More complicated version of CDSs came into the market. With the evolution process, three main types of CDSs emerged one after another: they are single-name CDSs, Index CDSs, and Synthetic CDOs. The Single name CDSs is the most basic type of credit default swaps, yet, before the crisis the trading volume of index CDSs and synthetic CDOs increased more rapidly, from nil to huge after 2004. The market share change of these three types of CDSs could be seen in the following Chart.

Chart 2: The composition of the CDS market

	2000	2002	2004	2006
Single name CDS	38%	45%	51%	33%
Index CDS	-	-	11%	38%
Synthetic CDO	-	-	16%	17%
Others	62%	55%	22%	12%
	100%	10%	100%	100%

Source: British Banker's Association (BBA 2006 report)¹⁶

3.1 Single-name CDSs

Single-name CDS means that the underlying reference entity of the CDS contract is singular, which could be an individual corporation or a sovereign country. Single name CDS is also called plain-vanilla CDS. As depicted in the Lehman-AIG example above, the reference entity of the CDS protection contract between Lehman and AIG is only one – GM, so such contracts are typical single-name CDSs. Conversely, if the

¹⁶ British Bankers' Association, "BBA Credit Derivatives Report," 2006.

number of underlying reference entity of the CDSs contracts is multiple, they will be called multi-name CDSs. For example, if Lehman had granted loans to two firms, and then bought CDSs protection referring to the creditworthiness of both the two firms, then this CDS contract is multi-name. In the multi-name CDSs contracts, the calculation of the protection fee will be more complex, the protection seller shall take into account the occurrence rate of the credit events in the two underlying loans. The later developed ones, like index CDSs, are all multi-name CDSs. Anyway, single-name CDS is the grounding brick to contract multi-name CDSs.¹⁷

In despite of the decrease of the market share of single-name CDS, it is still the most commonly traded CDS, because the single-name CDSs are highly customized. The counterparties could negotiate specific risk transferring clauses to cater for particular needs, which usually vary from different protection buyers. This advantage could hardly be replaced by more standardized CDSs, such as Index CDSs. On the other side, due to the feature of high customization, there lacks market liquidity of single-name CDSs, and thus they could hardly become speculative instruments, which means they are basically served for risk-hedging before the crisis. On this regard, they possess different risk character with the index CDSs and synthetic CDOs.

3.2 Index CDSs

In 2004, several international banks gathered together created the first CDS index.¹⁸ The Index CDS means CDS contracts with multiple indexed underlying reference entities.¹⁹ The constituent entities in the index usually have equal share of the notional amount of the index CDS contracts.²⁰ Simply speaking, a CDS index is similar to well-known stock indexes such as Dow Jones Industrial Average and

¹⁷ See European Central Bank (ECB hereinafter), "Credit Default Swaps and Counterparty Risk," August 2009, pp. 10-11. (Stated that "the later developed CDSs are all based on the structure of the single-name CDSs."), available at <<http://www.ecb.europa.eu/pub/pdf/other/creditdefaultswapsandcounterpartyrisk2009en.pdf>>, (last visited on 15 March 2015).

¹⁸ See Douglas B. Levene: "Credit Default Swaps and InsIbider Trading", 7 Virginia Law & Business Review 231, 2012, p.236.

¹⁹ Vinod Kothari, "Credit Derivatives & Structured Credit Trading," Willey, 2009, pp. 203-205.

²⁰ See ECB supra 17, "Credit Default Swaps and Counterparty Risk," August 2009, p. 9.

S&P500. However, instead of tracing the prices of a group of stocks, a CDS index tracks the price of a group of component CDSs.²¹ If any one of the component reference entity in the index experiences a credit event, the protection seller, usually the market-maker, shall pay to the Index CDSs buyers.²² Therefore, the Index CDSs could enable investors to take synthetic exposures to a diversified and standardized basket of reference entities,²³ essentially betting on the creditworthiness of a bunch of companies.

Before the crisis, the most popular CDS Index in the United States was CDX, which was constituted by a list of 125 North America based investment grade corporates.²⁴ Similarly, in Europe, the most active Index is the iTraxx, which consisted of 125 European investment grade corporates.²⁵ The selection procedure of the constituent names (corporates) in the two indexes is almost the same. Take the case of iTraxx for instance, the components of the iTraxx index would be innovated every six months, based on a vote of the participating market makers, the unqualified names will be cancelled out, and the corresponding number of eligible names will be added into the index. The maturity of iTraxx contains 3, 5, 7, and 10 years, that could be sold to the buyers.²⁶ By virtue of the standardization and diversification of reference entities, Index CDSs saved much cost for banks that face lots of loan counterparties, since that buying an Index CDS is much cheaper than buying a bunch of single name CDSs. It is therefore Index CDSs got great popularity in the banking industry, and overpassed the single name CDSs in a short time span. It is estimated that in June 2009, the index segment of CDS accounted for almost half of all CDS

²¹ See Sarai Criado et al..., "Structured Finance and the Financial Turmoil of 2007-2008: An Introductory Overview," Bank of Spain Working Paper Series, No. 0808, 2008, p.34. (Described that "A CDS index contract can be interpreted as an insurance contract covering the default risk of the pool of debt instruments issued by the group of companies on which the index is based.")

²² See Houman B. Shadab, "Counterparty Regulation and Its Limits: The Evolution of The Credit Default Swaps Market" New York Law School Law Review, Vol.54, 2009, p.59.

²³ See e.g. Darrell Duffie: "Innovations in credit risk transfer: Implications for financial stability," BIS Working Paper No.255, available at <http://papers.ssrn.com/sol3/papers.cfm?abstract_Ibid=1165484>, (last visited on 15 March 2014).

²⁴ Vinod, supra 19, p. 211.

²⁵ Ibid, p. 207.

²⁶ Ibid, p.207.

contracts in terms of outstanding notional amounts.²⁷ Meanwhile, the price discovery provided by CDS indexes facilitated the quick and easy sale of CDS portfolios, making the CDS market much more liquid than it would otherwise be.²⁸ However, from the rapid growth of Index CDSs we might suspect that the trading of Index CDSs was more dominated by speculation rather than hedging, which we will reason later.

It is mentionable that, besides the two omnibus indexes we have just discussed, there remain a number of other more sector-specific or geography-specific index CDSs. Among them, the most controversial one is the ABX.HE, which allows speculators directly betting on the price of the U.S. residential housing related securities.²⁹ When the disclosure rates in the US housing market increased, the financial institutions excessively sold out ABX.HE index CDSs suffered huge losses. In addition, a market of trading CDS index tranches also developed. CDS contracts could be sold with reference to only specific tranches within a CDS index, while each tranche relates to a certain portion of losses. For instance, the lowest tranche could absorb the first 3% of losses if credit event happens as to the index, and the mezzanine tranche absorb the 85% of the losses, and the high-graded tranche absorb the reminder.³⁰ The tranche index trading is the combination of index CDS with tranche technique of the financial engineering. As a result, the tranche index CDS trading could further serve more sophisticated market requirement, both risk hedging and speculation.

3.3 Synthetic CDOs

Synthetic Collateralized Debt Obligation, for short Synthetic CDO, is a “structured

²⁷ ECB supra 17, “Credit Default Swaps and Counterparty Risk,” August 2009, p.9 (stating that “the standardization and transparency of indices has contributed strongly to the growth of index contracts.”)

²⁸ Robert. F. Schwartz, “Risk Distribution in the Capital Markets: Credit Default Swaps, Insurance and A Theory of Demarcation,” 12 Fordham Journal of Corporate & Financial Law 167, 2007, p.176.

²⁹ Vinod, supra 19, p.212. See also ECB, supra 17, August 2009, p. 10. (Stating that “ABX (US) is the 20 most liquid CDS on US home equity ABS, the ABX.HE index is used by banks and asset managers that want to hedge asset-backed exposure or take a position in this asset class.”)

³⁰ See ECB, supra 17, 2009, p.10.

finance product,” which combines the technique of “securitization” and “derivatization.”³¹ In our research, we take synthetic CDOs as a type of CDS because we consider that Synthetic CDOs have the same basic character with other derivatives, whose value derives from the underlying assets. In fact, the value of Synthetic CDOs comes from the underlying securities. Besides, as we cited before, synthetic CDOs is usually taken as a kind of credit derivatives by relevant statistics, such as the 2006 report of British Bankers’ Association. Synthetic CDO was created around 2006, whose structure is based on the “cash flow” CDO. Through the sale of cash-flow CDOs, the originator, usually the banks that granted mortgages, intended to raise money from the public investors. In other words, cash-flow CDOs are the securitization product that links capital to the underlying assets, namely the mortgages. Therefore the cash-flow CDOs sellers could raise money and then grant to the mortgage loaners. The investors of CDOs could participate in the housing market, which is very attractive to normal investors that could not speculate directly through buying and then selling houses.

Compared with cash-flow CDOs, the originators of Synthetic CDOs do not sell the mortgage related assets to Special Purpose Vehicles (SPV, which could be seemed as a securitization machine), but only buy CDS protection from the SPV and remain the mortgage related assets still on the banks’ balance sheet. Then the SPV utilizes the premium fee from the originators to create mimicked CDOs and sold them to the public investors, which has the same procedure with selling cash-flow CDOs. Investors buying the Synthetic CDO equals to selling CDS protection to that portion of CDO securities. In other words, the Synthetic CDO transfers the default risk of underlying securities to investors who bought the sliced Synthetic CDOs, and once default happens, the payment orders according to different seniority of the slices.³²

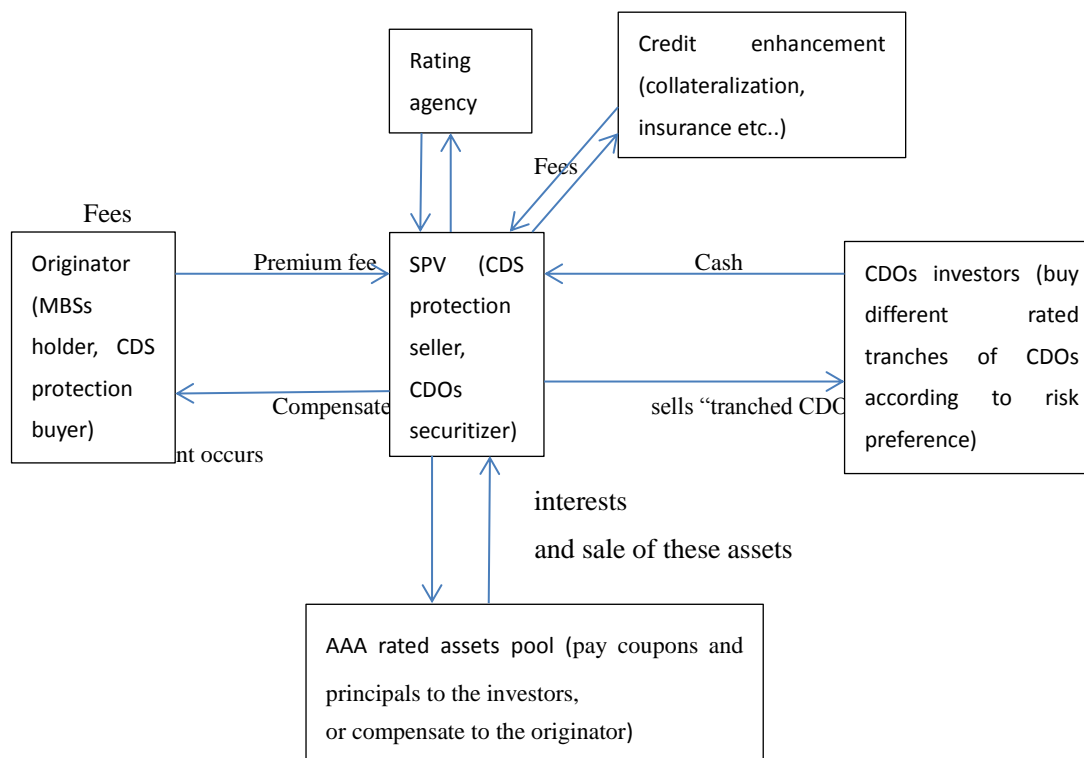
To illustrate, a typical trading structure of Synthetic CDO is graphed below. The

³¹ See Sarai Criado et al., supra 21, “Structured Finance and the Financial Turmoil of 2007-2008: An Introductory Overview,” 2008, p.35.

³² See Sarai Criado et al., supra 21, “Structured Finance and the Financial Turmoil of 2007-2008: An Introductory Overview,” 2008, p.37.

originators, i.e. the banks, only intended to get rid of the credit risk of the underlying assets pool constituted by “mezzanine tranches” of various Mortgage Backed Securities (MBS). Firstly, the originator buys CDS protection from the SPV. As exchange, the SPV receives a sum of protection fees. Then, the SPV securitized different tranches of CDOs according to the risk exposure transferred from the originator. These sliced CDOs will be successively sold to public investors, ranging from investment firms, hedge funds, pension funds, insurance companies and also some high-net-worth individuals. With money received from the investors, the SPV bought low risk financial investment products, usually rated AAA grade, such as the U.S. Treasury bonds. These low-risk financial assets SPV invested formed an asset pool, which could get periodic interest. Public investors in the sliced Synthetic CDOs could get periodic interest from the receivables of the asset pool, and if there is no credit event happened until the expiry of the synthetic CDOs, the investors could retrieve their principals and reap the pre-fixed premium. However, if any credit event occurs as to the reference underlying mortgage securities, the SPV shall sell the assets in the assets pool to compensate the originator, and corresponding losses will be assumed by the synthetic CDO investors according to the pre-determined risk-priority order.

Chart 3: The structure Of Synthetic CDOs



Hence, through the issue of Synthetic CDOs, the underlying mortgage risk of the banks could be firstly transferred to the SPVs, but actually such risk is transferred to the CDO investors, in the form of sliced CDO securities. Compared to a traditional CDS contract, usually one financial institution is the credit risk protection seller, in Synthetic CDOs, public securities investors are the ultimate risk protection seller. It is important that, be different with cash-flow CDOs, the creation of synthetic CDOs does not require the actual existence of the underlying assets in the originators' balance sheet, therefore, the originators could buy as much as CDS protections from SPVs, and thus transfer many-fold risk to the public investors. It is reported that, around 2006 when the U.S. housing market was irrationally hot, all wanted to invest in the housing market or in the housing related CDO securities, yet, the quantity of the underlying mortgages was not enough to create CDOs so as to satisfy the investors, and just in this background, the synthetic CDOs were created. In this sense, we believe that compared to single-name CDSs and index CDSs, Synthetic CDOs played

a more active role in the breakout of the 2008 financial crisis because they multiplied the losses of the whole market.³³ This argument will be further elaborated in the next chapter.

4. Economic Functions of CDSs

4.1 Hedging

From the economic perspective, hedging existed credit risk in the banks' balance sheet is the first and foremost function of CDSs, and this is the reason why they had been created.³⁴ Potential credit risk is the main threat to banks. Credit risk refers to that the banks could not be repaid by their counterparties they had loaned money to.³⁵ In the sense of hedging, the CDSs could be deemed as insurance policies that bought by banks or other companies to avoid possible future credit risk.³⁶ In fact, CDSs attributed these banks and other companies another risk-manage tool, which is very useful when, for example, the banks think they had taken too much risk exposure to a specific company or a specific sector. In other words, CDSs buyers could shift their risk exposures that have been heavily taken. One might wonder that, in this case, banks could assign the loan that they do not want to maintain any longer. Theoretically it is viable, but practically speaking, almost all banks will not do so because banks usually do not want to jeopardize the good relationship they have accumulated with their clients, provided that if the bank transfers a loan to a third party shall notify the debtor and that would usually imply the decline of the creditworthiness of the debtor in the financial market. So, the debtor would be

³³ This view has been also expressed by e.g. ECB, *supra* 17, 2009, pp.10-12. (It was reported that “the failed and near-failed financial giants, i.e. Lehman Brothers, Bear Sterns, and AIG all related with the trading of Synthetic CDOs.”

³⁴ See e.g. Brendan Sapien, “Financial Weapons of Mass Destruction: From Bucket Shops to Credit Default Swaps,” 19 *Southern California Interdisciplinary Law Journal* 411, p.419. (Stating that “in their infancy, CDSs were fairly tame and prudent financial instruments for hedging risk ventures and loans.”)

³⁵ See Frank Partnoy, “Infectious Greed: How Deceit and Risk Corrupted the Financial Markets,” Henry Holt and Company, 2003, p.375.

³⁶ Houman B. Shadab, “Counterparty Regulation and Its Limits: The Evolution of The Credit Default Swaps Market,” *New York Law School Law Review*, Vol. 54, 2009, p.58.

strongly against such behaviors of the banks.³⁷ However, through the usage of CDSs, banks could transfer the credit risk of certain debtors without letting that debtor be informed, although which has the same economic function as assigning the loan. Therefore, CDSs have unique advantages in hedging credit risk and this is why they became very popular among the banks. Not to mention that banks could transfer credit risk of a basket of debtors through buying relevant Index CDSs, saving a sum of hedging cost.

It is mentionable that an important underlying motivation for banks to hedge credit risk through CDSs is that their capital burden required by the Basel Capital Accord could, to some extent, be released, particularly when the loan amount is quite huge and the risk is rising.³⁸ Banks, in turn, could channel the released capital to more profitable activities.

4.2 Speculation

CDSs could also be used for speculation just like exchange-traded shares and commodity futures. This is exactly the most distinguishing difference with insurance policies. While policy-holder could only buy the insurance when he actually possess the underlying assets, for instant the real estate, and face potential losses, CDSs buyers could buy any quantity of CDSs protections against any reference entities that do not have any relations with the buyer. Namely, the buyers of CDSs could be purely speculators, betting the happening of credit events. Or, the speculators could sell the CDSs when the CDSs price, i.e. the premium fee, gets higher. This is the same with

³⁷ See Eliana Angelini: "Credit Default Swaps and Their Role in the Credit Risk Market", International Journal of Academic Research in Business and Social Science, Vol.2, No.1, 2012. (Stressing that "maintaining the creditor-client relationship is very important when the borrower is the key customer in the credit market.")

³⁸ See, e.g. Robert. F. Schwartz, "Risk Distribution in the Capital Markets: credit default swaps, insurance and a theory of demarcation," 12 Fordham Journal of Corporate & Financial Law 167, 2007, pp. 174-5; see also Matthew Phillips, "How Credit Default Swaps Became a Time Bomb," Newsweek press, 14 March, 2010. (Stating that "transferring this risk and allowing banking institutions, like Morgan, to take this risk off of its books, freed up their capital reserves that were once required to be held as protection in the event any of the outstanding loans they had granted defaulted."), available at <<http://www.newsweek.com/how-credit-default-swaps-became-timebomb-89291>>, (last visited on 15 March 2015).

the trading strategy in the stock market: buy low and sell high.

We highly appreciate the function of hedging-purpose traded CDSs for the whole financial system as they provided an efficient and swift risk transferring mechanism, yet we believe that excessive and unregulated speculative CDSs trading could destroy the market. However, unfortunately, before the crisis, the trading volume of speculative CDSs transactions greatly surpassed the hedging ones. It is estimated that almost 80 percent of the credit default market was traded by firms that do not own the underlying debt.³⁹ It was also argued that with the value of the CDS market, larger than the bonds and loans that the contracts reference, it is obvious that speculation has grown to be the most common function for a CDS contract.⁴⁰ Although lack of precise statistics, we are confident that index CDSs and synthetic CDSs are more traded as speculations than the single-name CDSs because they are more standard and liquid, so the speculation cost would be much lower than the single-name CDSs. As commented by Gillian Tett that “due to the change of the trading purpose, the market had become extremely perilous.”⁴¹

How CDSs could be popular speculative instruments in the financial market? Several reasons could be perceived. Firstly, CDSs could enable market participants to take long or short positions on the credit quality of any reference entity, including firms, sovereign states and even mortgage securities, without actually holding the underlying assets, namely the relevant bonds and securities.⁴²

Secondly, the speculations on CDSs would be more efficient and cost-saving than speculations on the economically-relevant securities. For example, a speculator who

³⁹ See Dawn Kopecki & Shannon Harrington: “Banning Naked Default Swaps May Raise Corporate Funding Costs,” Bloomberg Report, 24 July 2009, (Describing that “CDSs in which the buyer does not own the underlying debt are usually referred to as “naked” credit default swaps.”) available at <<http://www.bloomberg.com/apps/news?plbid=newsarchive&slbid=a0W1VTiv9q2>> (last visited on 15 March 2015)

⁴⁰ Wayne Pinsent: “Credit default swaps: an introduction,” Investopedia Report, available at <<http://www.investopedia.com/articles/optioninvestor/08/cds.asp>> (last visited on 15 March 2015).

⁴¹ Gillian Tett, “Fool’s Gold, How Unrestrained Greed Corrupted a Dream, Shattered Global Markets and Unleashed a Catastrophe,” Abacus, 2010, p.102.

⁴² See Janis Sarra, “Financial Market Destabilization and the Role of Credit Default Swaps: An International Perspective on the SEC’s Role Going Forward,” 78 University of Cincinnati Law Review 629, p.732.

takes a long view towards the subprime mortgage, he can sell CDS protections against the mortgage securities. This is what had been done before the crisis by a bunch of financial institutions. In selling such CDSs, these financial institutions did not need to buy mortgage-backed securities; instead, they only need to promise to compensate the CDSs buyers if credit events really happen. By doing so, they could save the capital in directly investing in the securities market. And for the CDS buyers who take a short view against the mortgage, they also did not need to actually buy the mortgage-backed securities, but paying CDSs protection fees to the relevant CDSs sellers. When credit event happen, the CDSs buyers could get the notional amount of the mortgage-backed securities, which is much more than the protection fees and thus be attractive to these investors. As the protection fees are less than the notional amount of relevant securities, for the short investors, a sum of capital could also be saved.

Besides, the CDSs contract buyer could also transfer these contracts to investors if the buying price of the same CDSs becomes higher, namely the premium or the protection spread is increased. In this case, CDSs contract is like stocks, but they are not the same because they comply with different assignment rules that we will discuss later. Thus, the market liquidity has given CDSs buyers another way to withdraw from the market in advance of the maturity date. Just because of the availability and flexibility of CDSs, speculative transactions could become perversely prosperous before the crisis. Doubtlessly, those speculations promoted the happening of the crisis and increased the volatility in credit spreads during the crisis.

5. Features of CDSs

5.1 High leverage

Although CDSs, from the economic perspective, have become very similar with other securities since that they share commonality as investable financial products, CDSs have some distinguishable features, which make them more dangerous to the financial system. We shall take caution of these special features.

Firstly, CDSs are transactions with high leverages. We believe that Loss is often the fuse, and the high leverage is the real bomb. As a common used strategy of commercial firms, leverage describes the ability to use one dollar to control multiple dollars of assets as well as the ability to use one dollar to capture the return of multiple dollars on any given asset.⁴³ For short, leverage refers to the ability to carry what scale of transaction with per capital. In this regard, CDSs are financial instruments with higher embedded leverage. To illustrate, the annual premium fee of a typical CDS contract with maturity of 5 years is around \$ 70 cents in relation to notional amount of \$100 reference assets. The total premium fee the protection buyer would pay to the CDSs seller is \$3.5 if no credit event happens. However, once any credit event happens, the protection seller shall pay out \$100 to the buyer, which means that the leverage ratio in this CDS contract is 100:3.5, approximately 30:1. The high leverage brought lots of speculators enter into the CDSs market as they only need invest little money while waiting for potential much bigger returns. However, the most dangerous thing is that the inherent high leverage of CDSs could directly lead to “jump-to-default” risk to those financial institutions excessively sell CDS protections, especially in an environment of scant regulation. In practice, many financial institutions highly involved in the CDSs market, betting the depreciation of mortgages or seeking the premium fees. As reported, in 2007, Bear Sterns had the leverage ratio of 33 to 1; and Lehman Brothers had the leverage ratio of 40 to 1.⁴⁴

5.2 Off-balance trading

In the common accepted accounting practices, financial derivatives transactions are usually not listed in the balance-sheet, sometimes they might be annotated outside the

⁴³ Raffaele Scalcione, “The Derivatives Revolution: A Trapped Innovation and A Blueprint for Regulatory Reform,” Wolters Kluwer, 2011, p.109.

⁴⁴ See Dimitris N. Chorafas, “Capitalism without capital,” Palgrave, 2009, pp. 91-92, (stating that “when in March 2008 Bear Sterns crashed, Wall InsIbiders saIbid it was geared 33 times up, while when Lehman Brothers went down the tubes 6 months later, it was geared up 40 times up. Shortly after Lehman’s bankruptcy when Fortis was saved from the taxpayer’s money, an Italian banker told me he had unearthed the following gearing ratios for a bunch of European banks: Barclays, 63 times; Royal Bank of Scotland, 45 times; Fortis, 40 times; Dexia, 28 times; Unicredit, 20 times.”)

balance-sheet. This is because that derivatives trading do not involve tangible physical exchanges. Like other financial derivatives, CDSs trading is also an off-balance sheet according to normal financial reporting standards.⁴⁵ Therefore, the CDSs transaction information of a company could not be disclosed by the financial statements, which means that the neither shareholders of the company, the creditor banks nor financial regulators could fully understand the potential risk of the company due to derivatives trading. And the counterparties could also appreciate the derivatives trading situation of these companies. Therefore, they could not evaluate the risk exposure of derivatives trading of their counterparties. Namely the creditworthiness of their counterparties could not be evaluated by themselves, but the market participants could only rely on the grading of the Credit Rating firms, like the Moody's. So, if the grading of these rating firms is problematic, all the financial transactions would be based on misleading information and could be risky to the whole financial system. Hence, the off-balance accounting practice of CDSs transactions is also one of the reasons, making the CDS market opaque. The opaqueness inhibited financial regulators timely and efficiently intervene into this market after the 2008 crisis broke out.

5.3 Over-the-Counter trading

As we have mentioned above, CDS is a kind of over-the-counter (OTC) traded derivatives, which is different with on-the-exchange traded commodity futures or share price index futures. The most distinguishing feature of OTC traded products is that they could be negotiated by the counterparties in terms of concrete contract terms, thus they are more apt to accommodate individual specific trading objective. Moreover, they also have an advantage of confidentiality. Without the consent of the counterparty, the other could not disclose the concrete content of the contracts. This

⁴⁵ See George Chacko et al..., "Credit derivatives: A primer on Credit Risk, Modeling, and Instruments," 1st ed. June 2006, FT Press, (Stating that "a single-name CDS is a bilateral, off-balance-sheet agreement between two counterparties.")

inherent character of OTC CDSs trading, to some extent, has been changed when more standard Index CDSs and synthetic CDS came into the market, provided that these CDSs are usually traded on the electronic platforms of the market makers, i.e the qualified banks. So, part of the trading information could be obtained by these banks that operate the electronic trading platform. However, before the crisis, these newly arisen trading venues were out of the regulatory purview, therefore trading information was not efficiently maintained by these platforms and regulators could not timely access to the precious trading information of CDSs.⁴⁶ Therefore, the opaqueness of the CDSs market has already been determined by the intrinsic feature of OTC trading.

6. Legal nature of CDSs

6.1 Contracts or securities

For the legal analysis, we shall firstly accurately determine the legal nature of these CDSs products.⁴⁷ However, as they are newly grown up financial products and many aspects of CDSs have been under evolution, so there is no consensus to this question. An urgent question to answer is that “are they normal contracts or securities?” For sure, these single-name CDSs privately negotiated and traded OTC are contracts, but as for the index CDSs and other more standardized CDSs contracts, the answer might not be definite. Yet, if we could not carefully solve this problem, we could not ascertain which regulatory rule shall apply to these CDSs, and which financial regulator shall be responsible for monitoring these CDSs.

Someone argued that index CDSs and some other standard CDSs products could be deemed as securities because they could be easily assigned to third parties, which is just like buying and selling exchange-traded stocks. For professionals in the

⁴⁶ See also Benjamin. B. Saunders, “Should Credit Default Swap Issuers Be Subject to Prudential Regulation?” *Journal of Corporate Law Studies*, October 2010, p.428.

⁴⁷ The determination of the legal nature would be more important for civil law lawyers than common law lawyers, since that civil law is more strictly conceptualized.

financial market, they also do not care about the difference between the legal nature of securities and CDSs, for them, they are all commonly called the financial instruments.⁴⁸ Moreover, as the index CDSs are traded on the electronic platform, whose prices could be timely indicated.⁴⁹ Besides, the index CDSs contracts are, in fact, assigned several times before the contracts maturity is due. Hence, viewed from the appearance, they are really akin to securities, i.e. that are movable property. So, many people are confused about the legal nature of such CDSs.

Nevertheless, we consider that, legally speaking, the Index CDSs are still contracts, not movable securities. The reason is simple. Although index CDSs could be easily assigned and they have prices like other movable property, the transfer of which shall still comply with the general legal rule of contract assignment, namely, only the credit right could be transferred with a notice to the obligator, and obligation could not be transferred without the consent of the creditor.⁵⁰ But a privately owned securities or movable properties could be freely transferred according to one's own willing. In practice, the time of assignment of index CDSs contracts has been greatly shortened according to the request of the derivatives industry, but the contract parties still need to obey with the contract assignment rule, i.e. the index CDSs buyers shall get consent from the index CDSs sellers, usually the market-makers. Nevertheless, we think that the legal of index CDSs and other similar standard CDSs is blurred by the practice, and they might be considered as one special type of securities under securities regulation and supervision. As to synthetic CDOs, they are sold in the form of securities with the inner essence of derivatives; we could call them securitized derivatives. Hence, for synthetic CDOs, they should definitely be regulated according

⁴⁸ There is one common opinion that the financial professionals did not want to make clear the legal nature of CDSs as they did not want regulators to intervene into this unregulated market.

⁴⁹ The prices of Index CDSs are public information, which are managed by some financial companies, such as the Markit Corp. Markit is a leading global provider of financial information services. Markit Pricing Data offers live, snapped and end-of-day price updates for approximately 2,600 CDS entities and all the major credit indices, CDX and iTraxx. Markit also delivers a suite of value-added CDS services to provide greater transparency into the marketplace. More information could be available at the official site of Markit <<http://www.markit.com/Product/Pricing-Data-CDS>> (last visited on 15 March 2015).

⁵⁰ See Vinod Kothari, *supra* 19, "Credit Derivatives & Structured Credit Trading," p.328.

to the securities law regime.

6.2 Insurance contracts

The legal nature of CDSs contracts could also be confused with insurance policies, especially in relation to the single-name CDSs. From the economic perspective, buyers of CDS contracts bought credit risk protection from the CDSs sellers, which is exactly the same with buying property insurance policies.⁵¹ However, according to insurance law, the policy holder shall possess “insurable interest” in relation to the object of the insurance, i.e. property or health and so on. It means that the policy holders shall have direct interest with the insurance object, if any losses occur in relation with the insurance object, the policy holders will incur economic or physical losses as well. This principle aims at avoiding “moral hazard.” For example, if you do not own a house but you have bought a fire insurance policy against the house, then probably you would burn the house, deceiving the insurance company so as to get compensations. But in the CDSs market, the protection buyers are not required to really have the potential risk, namely the reference debt. So, anyone could buy CDSs contracts from the seller and any quantity of CDSs protections could be bought. And these transactions without holding underlying risk are exactly the speculative CDSs transactions. In this sense, speculative traded CDSs contacts are intrinsically different with insurance policies.

After the crisis, people have realized unregulated CDSs could generate huge risk. Thus some scholars proposed that CDSs trading shall be regulated under the legal framework of insurance law. In this way, speculative CDSs transactions will be inhibited by law. However, this proposal received little resonates, neither from the regulators nor from scholars. Generally, there are two antagonistic standpoints. One is that appropriate speculative transactions could promote market liquidity and thus

⁵¹ This view has also been expressed by many scholars, e.g. Houman B. Shadab, “Counterparty Regulation and Its Limits: The Evolution of the Credit Default Swaps Market” New York Law School Law Review, Vol. 54, 2009.

reducing the hedging cost of buying CDSs contracts. Another one is that most of the market participants in the derivatives market are financial institutions that usually have the ability to protect themselves. Yet, in the insurance market, lots of insurance policy holders are individuals who need more protection from mandatory law. This difference of market composition could justify that CDSs are not suitable and necessary strictly regulated just as insurance.

6.3 Gambling contracts

Are CDSs contracts gambling contracts? Many people would wonder that CDSs trading is similar with gambling, or betting, especially as to those speculative transactions, considering that the buyers of the CDSs just want to get the final compensations if credit event happens or to seek for the inflation of the CDSs prices if they assign them before the maturity date; meanwhile the CDSs buyers are betting that no credit event would happen and then they could reap the protection fees. Economically speaking, they are actually the same with bets. This claim has also been affirmed by the famous derivatives Professor Stout, who stated that “derivatives are literally bets – agreements between parties that one will pay the other a sum of money determined by whether or not a particular event occurs in the future. Buying CDSs is just as buying a betting ticket at the racetrack for horses.”⁵²

Nevertheless, whether they should be legally viewed as gambling contracts, i.e. game contracts in civil law terminology and wagers in common law, is problematic. Firstly, as to the hedging CDSs contracts, they should definitely not be considered as gambling contracts because the core goal of them lies in hedging risk rather than betting. Secondly, for those speculative CDSs, if they are considered as gambling contracts, the performance of which would not be legally supported, and thus speculative CDSs trading would be greatly inhibited. This might be good for controlling potential risk due to excessive speculation, but it would also damage the

⁵² Lynn A. Stout, “Derivatives and the Legal Origin of the 2008 Credit Crisis,” 1 Harvard Business law Review 1, p. 6.

market liquidity of the CDSs market and correspondingly raise the hedging cost of buying CDSs. There is always a value-balance between security and efficiency. However, considering speculative CDSs as gambling contracts seems outdated, and which might not be a wise option for regulators towards re-regulating the CDSs market.

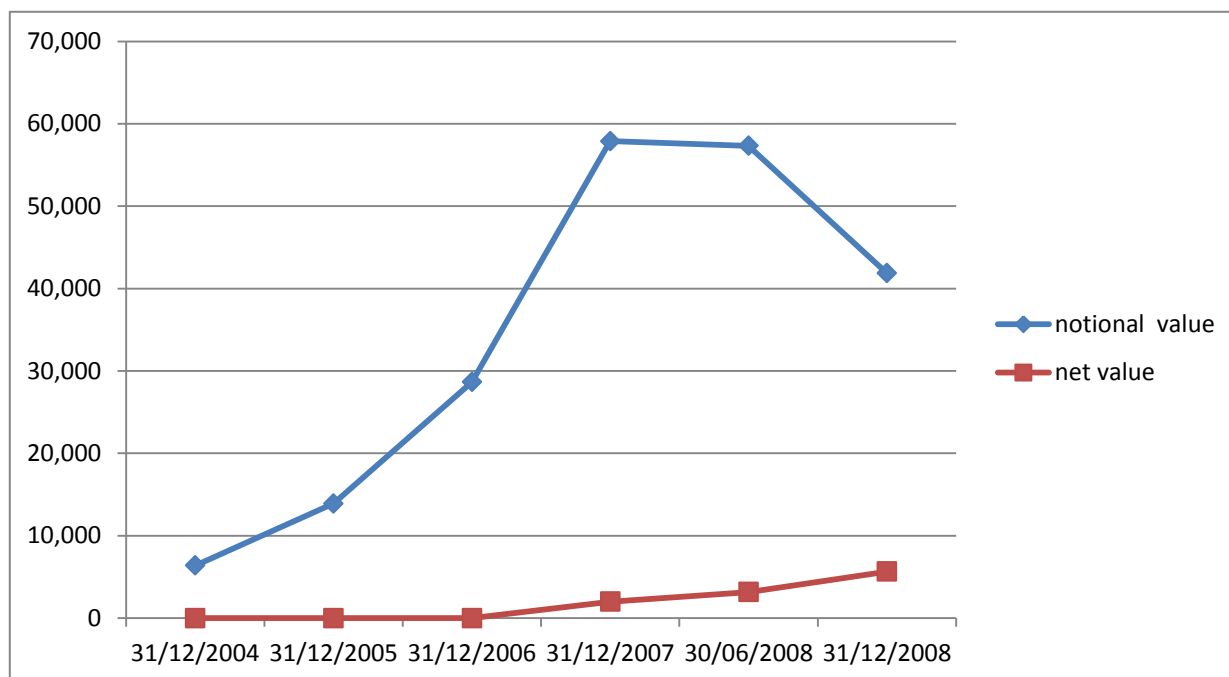
7. Market development of CDSs before the 2008 financial crisis

Before the 2008 financial crisis, the market size of CDSs experienced huge growth. To quantify the market volume of CDSs, we looked into the statistics collected by the Bank for International Settlements (BIS), which took semiannual and triennial survey in relation to OTC derivatives as of the end of 2004.⁵³ These statistics provided two types of data: the notional amounts of the outstanding OTC derivatives and the gross market values of the outstanding OTC derivatives. The notional value is the quantity that we usually used for describing the market size of the outstanding OTC derivatives, including CDSs. It has been revealed in the data of BIS that at the end of 2004, the aggregate notional amount of the outstanding CDSs is 6,396 billion US dollars, which doubled each year after that and the its size peaked in 2007 to 57,894 billion dollars. In other words, the CDSs market increased almost 10 times in less than 4 years, which obviously is the rapidest growth one among all OTC financial derivatives.⁵⁴ However, the notional amount of the CDSs contracts does not mean the total market risk, as notional amount value only refers to the aggregation of the notional value of all CDSs contracts, namely the aggregation value of the reference debts, specifically, the aggregation value of the underlying loans, bonds and securities.

⁵³ The objective of the surveys is to obtain comprehensive and internationally consistent information on the size and structure of the largest OTC derivatives markets. See the website of BIS, available at <<http://www.bis.org/statistics/derstats.htm>>, (last visited on 15 March 2015).

⁵⁴ At the end of June 2007, the notional value of all OTC derivatives went up by 135% to 516 trillion dollars. This corresponds to an annualized compound rate of growth of 33%. See BIS, "Triennial Central Bank Survey, Foreign exchange and derivatives market activity," December 2007.

Chart 4: The size of CDSs market (in billions of U.S. dollars)



Source: Bank for international Settlements

However, as we know, in the marketplace, traders of CDSs could buy countervailing CDSs contracts to offsetting original ones when they do not want to keep the former risk exposure any more. In this case, there would be two equal notional amount CDSs in the market, and the notional value of which will both be calculated into the aggregate market notional value. Yet, with exactly opposite directions, the risk exposure of the countervailing CDSs could be offset and would not harm the market if proper multilateral off-setting arrangements have been laid down.⁵⁵ Therefore, the BIS provided the net notional amount data to reveal real money losses if default happens, that is the aggregate payments that would be made in the event of the default of a reference entity, assuming the market value of defaulting bonds is equal to zero.⁵⁶ At the end of 2008, the net notional amount of the whole CDSs

⁵⁵ This type of service is supplied for example in the US by the Depository and Trust & Clearing Corporation (DTCC), and TriOptima.

⁵⁶ However, the market value is usually greater than zero as it considers an estimate of the recovery rate, thus the payment value in the event of default would therefore amount to: net notional value * (1-recovery rate).

market is 5.65 trillion US dollars, which is nearly 1/10 of the gross notional amount. This gap between gross notional value and net value was greatly contracted since the wider usage of compression service after the crisis. According to Vause (2010) the gross notional value of the CDSs has more than halved since the peak of 2007 because of the great development of compression mechanism, while CDS trading has continued to grow even after 2007. Over all, the notional value is more appropriate to indicate the risk exposure to the counterparty, namely the counterparty risk; while the net notional value is a measure of the size of the market in terms of credit risk reallocation.⁵⁷

The gross notional value had been much bigger than the net notional value also indicated that speculations dominated this market as the buyers tended to assign the CDSs contracts to reap the arisen spread price. But before the crisis, multinational netting mechanism was not widely used in this market, so the traders of CDSs usually face the counterparty risk and a “risk chain” was formed, in which market participants know their direct counterparties but not the parties further down the chain.⁵⁸ Meanwhile another important market feature of CDSs has also been observed. Although the market is active, most of the market participants are financial institutions, especially the CDSs market dealers. It is estimated that 88% of the protection buyers and 86% of protection sellers are banks, securities firms, and insurance companies.⁵⁹ Even further, the CDSs transactions were concentrated among the biggest market dealers, according to the 2005 data of the Office of the Comptroller of the Currency (OCC) of the United States, 96% of the total notional amount of credit derivatives business were transacted by five largest commercial banks, and more than 99% were transacted by the top 25 banks.⁶⁰ This situation is the

⁵⁷ See The Board of the International Organization of Securities Commissions (IOSCO), “The Credit Default Swap Market Report,” June 2012, available at <<https://www.iosco.org/library/pubdocs/pdf/IOSCOPD385.pdf>> (last visited on 15 March 2015)

⁵⁸ Ibid, pp.14-15.

⁵⁹ DavIbid Z. Nirenberg & Richard J. Hoffman, “Are Credit Default Swaps Insurance” 3 Derivatives Report7, 2001, p. 15.

⁶⁰ Dawood Ashraf et al..., “Who Transfers Credit Risk? Determinants of the Use of Credit Derivatives by Large US Banks,” The European Journal of Finance, Vol. 13, No.5, July 2007, p. 484.

same in Europe, the top ten counterparties of surveyed large European banks account for 62-72% of their CDS exposures.⁶¹ Furthermore, as the CDSs market was highly concentrated within a limited number of financial institutions, i.e. large banks, investment firms, hedge funds and insurance companies, the whole financial market was tightly interconnected through the chain of CDSs transactions. Without appropriate multilateral netting arrangement, counterparty risk could be evolved into a systemic contagion risk, one party's default would trigger "domino effect" along the CDSs trading network, which became the biggest concern of the banking industry.⁶²

It is mentionable that the European Union has become the most important region of OTC derivatives transactions. According to the report of British Bankers Association (BBA), Europe took over 44% OTC derivatives market share globally, while the US took over 38%.⁶³ Particularly, as for CDSs, global market share of counterparties located in the EU is 35%, while this data is 21% in the US.⁶⁴ In fact, the OTC derivatives market is a highly-international market. As long as local market regulation does not impose access barriers, participants can connect and trade remotely and seamlessly from around the world, e.g. from their London trading desk to the Eurex-Exchange in Frankfurt.⁶⁵ And in order to compete for more market share, EU and the US even struggle to provide least regulation as to derivatives trading, though not clearly spoken out. Nevertheless, this is exactly the scenario before the crisis

⁶¹ ECB, *supra* 19, "credit default swaps and counterparty risk," 2009, p. 4, (stating that "the CDS market remains highly concentrated in the hands of a small group of dealers, which is European banks' main concern as regards CDS counterparty risk. ... the concentration of the CDS market is now higher than it was before the crisis, since some major players – for instance dealers (e.g. Bear Sterns, Lehman Brothers and Merrill Lynch), or counterparties used to be sellers of protection, such as monolines, credit derivative product companies (CDPCs) and hedge funds – have exited the market. This concentration has increased the liquidity risk in the event of another dealer failure").

⁶² See *Ibid*, p. 5.(explained that "Because of its highly concentrated and interconnected nature, and given the evidence of possible under-collateralization of CDS positions, one of the main sources of risk in the CDS market is counterparty risk generated by the default of large protection sellers. The use of central counterparties has been seen as a way of mitigating counterparty risk and preventing default contagion.)

⁶³ British Bankers' Association, "BBA Credit Derivatives Report," 2006.

⁶⁴ ECB, "OTC derivatives and post-trading infrastructures," September 2009, available at <<http://www.ecb.europa.eu/pub/pdf/other/overthecounterderivatives200909en.pdf>> (last visited on 15 March 2015)

⁶⁵ See Deutsche Börse Group, "The Global Derivatives Market: An Introduction," white paper, 2009.

Chapter 2 CDS and its role in the 2008 global financial crisis

In chapter 1, the basic information of CDSs market has been illustrated, from which we might have already be conscious that CDSs trading is risky, and without appropriate regulation, they could threaten the safety of the financial system. But, are they really related with the breakout of the 2008 financial crisis, as widely blamed by the media or some scholars, or they are just the scapegoat, namely not the real cause of this crisis?⁶⁶ Notwithstanding, we would like firstly assume that the happening of this crisis is, for sure, the result of the combination of a bunch of factors, ranging from the regulatory failure, macroeconomic context and even the greedy nature of human beings and so on. We are not going to differentiate which factors are related and which ones are extraneous. For our work, we will concentrate on the roles CDSs have played in the crisis. To find the answers, we would firstly go through the happening process of this crisis.

1. The evolution processes of the 2008 financial crisis

In retrospect, the 2008 global financial crisis generally went through three successive stages: starting from the U.S. Subprime crisis to the Wall Street banking credit crisis and finally evolved into the global financial crisis.

Before 2007, the U.S. housing industry had experienced a long period of prosperity. The prices of real estate more than doubled in more than a hundred

⁶⁶ See generally Yongheng Deng et al..., "CDO Market Implosion and the Pricing of Subprime Mortgage-Backed Securities," Working Paper, March 2009, (they found empirical evidence consistent with propositions that the growth of CDOs mispriced subprime mortgage-backed securities), available at <<http://ssrn.com/abstract=1356630>> (last visited on 15 March 2015); see also, Uday Raja et al... "The Failure of Models that Predict Failure: Distance, Incentives and Defaults," Chicago GSB Research Paper No. 08-19; EFA 2009 Bergen Meetings Paper; Ross Scholl of Business Paper No.1122, available at <<http://ssrn.com/abstract=1296982>> (last visited on 15 March 2015); Joshua D. Covalet al..., "The Economics of Structured Finance," Harvard Business School Working Paper No. 09-060, 2008, (arguing that the growth in securitization, which "allowed trillions of dollars of risky assets to be transformed into securities that were widely considered to be safe.")

metropolitan areas, for example in Los Angeles, Miami, Atlantic City and so forth.⁶⁷ Meanwhile, the U.S. homeownership rate reached to a historical-high record level of 68.1%.⁶⁸ In fact, increasing home ownership has been the goal of several US administrations, including the Roosevelt, Regan, Clinton and the Bush government. Therefore, the homeownership rise was endorsed by US government policies, such as the “affordable housing policy” advanced by the Bush Administration.⁶⁹ Under the general background of economy and the government policy, the U.S. real estate industry went into irrational prosperity.

Over the years before the crisis, houses turned out to be not merely places for settling down families, but the most-recommended speculative commodity. Just as one vividly depicted that it seems the whole country of the United States has been immersed into the euphoria of constructing houses and buying houses. While wealthy people speculated on houses, normal people also wanted to participate in the speculation on houses. When the housing price was rising, the mortgage loan standards were greatly declined, householders could easily bought houses borrowing money from the mortgage loan banks. It seems that the mortgages would never default, and actually in these years before the crisis broke out, the US mortgage default rate was historically low. Thus, the mortgage banks went further, downgrading the mortgage standards to the “subprime householders” around 2002,⁷⁰ which turned

⁶⁷ See The Financial Crisis Inquiry Commission(FCIR, hereinafter), “Final report of the National commission on the causes of the financial and economic crisis in the united states,” 2011, available at <<http://www.gpo.gov/fdsys/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf>> (last visited on 15 March 2015); see also Robert J. Shiller, “The Subprime Solution: How Today’s Global Financial Crisis Happened, and What To Do About It,” Princeton University Press, 2008, p. 5, (stating that “ home prices and homeownership had been booming since the late 1990s, and investing in a house had seemed a sure route to financial security and even wealth.”)

⁶⁸ This data was searched from the website of U.S. Census Bureau, available at <<http://www.census.gov/>> (last visited on 15 March 2015).

⁶⁹ It is arguable that the “affordable housing policy,” which aims at promoting homeownership for the low income households and especially for the minorities, pushed the Government-sponsored-entities, i.e. Fannie Mae and Freddie Mac to purchase risky loans, and led to a general breakdown in underwriting standards for all lending. This opinion could be seen e.g. Michael Simokovic, “Competition and Crisis in Mortgage Securitization,” *Indiana Law Journal*, Vol.88, 2013, p.213.

⁷⁰ The term “subprime” refers to the quality of the mortgage borrower as determined by various consumer credit-rating bureaus such as FICO. The highest quality borrowers are referred to as “prime”, hence the interest rate charged on loans to such low-default-risk individuals. Accordingly, “subprime” borrowers have lower credit scores and are more likely to default than prime borrowers. Historically, this group was defined as borrowers with FICO scores below 640, although this has varied over time

out to be a big mistake. Lots of people who would not have the capacity to buy houses entered into the housing market, which increased the risk of the banking industry. When the banks perceived that the risk could make them into danger, they irresponsibly transferred them into the financial market. Hence huge risk accumulated within the financial system.

The U.S. housing market was quietly changing after 2004. The US governors were worried about the irrational housing market, which had caused high inflation. In fact, since 2000 after the breakout of the internet bubble, the Federal Reserve excised a very-low interest rate policy aiming at promoting investment and correspondingly raising the employment rate. However, after 2004 the first aim of Federal Reserve has changed into fighting with high-inflation, though the economic increase was moderate.⁷¹ From 2004, the U.S. Federal Reserve gradually raised the federal fund rate from 1% to 5.25%.⁷² In response to the federal fund rate, the mortgage loan rate was also climbing rapidly, in particular, the adjustable-rate of subprime mortgages suddenly spiked. Suddenly, most of subprime mortgage borrowers found they could not afford the mortgages any more, even they found their house value became less than the remainder mortgage loans. Therefore, from the spring of 2006, the US subprime crisis began float to the surface: lots of subprime householders abandoned the houses and the disclosure rate suddenly rose up (See charter 5 below). When the houses were disclosed and resold to the market, the housing price accurately went down. Till 2008, home prices in many cities of the US declined more than 20%, like Phoenix chalked up -32.7%, Las Vegas down 31.7, San Francisco down 31%, Miami

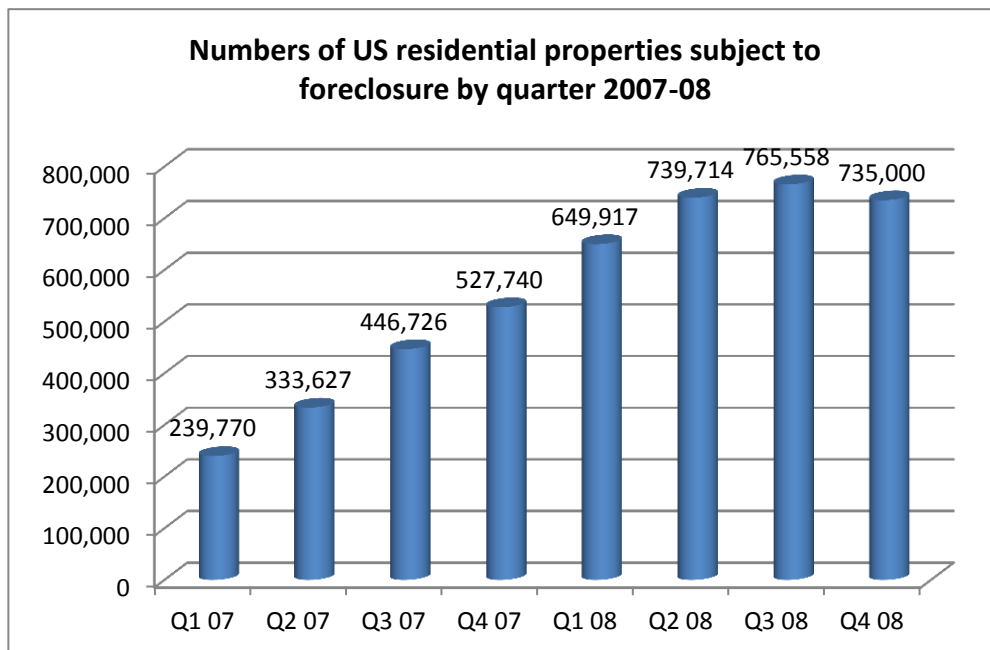
and circumstances, making it harder to determine what subprime really means. See Andre W. Lo, "Reading about the Financial Crisis: A Twenty-One Book Review," *Journal of Economic Literature*, Vol. 50(1), 2012; See also Joh Hull, *supra*, p.186, (FICO is a credit score developed by the Fair Isaac Corporation and is widely used in the US. It ranges from 300 to 850.)

⁷¹ See Grace Wong, "Fed Hikes Rates Again," CNN Money Report, (Describing that the central bankers said in their statement that some inflation risks remain, but the statement shows that the Fed under new Chairman Ben Bernanke is focused on fighting inflation.) available at <http://money.cnn.com/2006/06/29/news/economy/fed_rates/> (last visited 15 March 2015)

⁷² Marc Labonte, "Monetary Policy and the Federal Reserve: Current Policy and Conditions," Congressional Research Service 7-5700, p. 9, available at <<http://fas.org/sgp/crs/misc/RL30354.pdf>> (last visited 15 March 2015).

down 29%, Los Angeles down 27.9%.⁷³ Hence, the mortgage loan lenders, mostly the local mortgage banks and commercial banks, encountered huge losses. On 2nd April 2007, the New Century Financial Corporation filed for bankruptcy protection, which became the largest subprime mortgage lender ever to fail.⁷⁴ After that, the housing market continued to deteriorate, in July 2007, a number of mortgage-related financial institution bankrupted, symbolized the comprehensive eruption of the U.S. subprime crisis. Then, the crisis extended to the Wall Street banks, the heart of the whole financial system.

Chart 5: U.S. properties with foreclosure (2007-08)



Source data: RealtyTrac Press Releases of “U.S. Foreclosure market report”

As the mortgage lenders failed down, losses rapidly spread to the Wall Street investment banks, for that, in practice, the Wall Street banks bought lots of mortgage loans from the local banks and then securitized these loans. Moreover, these

⁷³ More details could refer to Ruth Mantel, “Home Prices off Record 18% in Past Year, Case-Shiller Says,” MarketWatch Reptot, available at <<http://www.marketwatch.com/story/home-prices-off-record-18-in-past-year-case-shiller-says>> (last visited 15 March 2015).

⁷⁴ See Brandley Keoun & Steven Church, “New Century, Biggest Subprime Casualty, Goes Bankrupt,” Bloomberg Report, April 2, 2007, available at <<http://www.bloomberg.com/apps/news?plbid=newsarchive&refer=&sIbid=aA4QFqFMRwZ4>>(last visited 15 March 2015).

investment banks not just sold the mortgage-tied securities, but also bought lots of these securities and related derivative products, thereby risks passed to Wall Street banks via the credit chain. In August 2007, the fifth biggest U.S. investment bank Bear Stearns announced the bankruptcy of its two “High-Grade” hedge funds due to the huge losses in subprime mortgage-related securities.⁷⁵ The bankruptcy of the two hedge funds resulted in a sum of 1.9 billion dollars write-down on Bear’s book, which made the counterparties of Bear Stearns began to question its financial stability.⁷⁶ In March 2008, Bear’s repo lenders –mostly money market mutual funds – increasingly requested Bear to post more collateral and pay higher interest rates. Then other counterparties of Bear also claimed the same request, suddenly increased collateral requirements directly paralyzed the operation of this famous company.⁷⁷ Just in two days, the bank’s capital reserve was depleted. In order to prevent bankruptcy, Bear Stearns had to agree the fire-sale price taken-over by JP Morgan Chase under the orchestration of the U.S. government.⁷⁸ Due to the similar losses with Bear Stearns, all other big names in the Wall Street were endangered. In September 2008, the Wall Street crisis peaked. On 14 September, Merrill Lynch was acquired by the Bank of America because of the bankruptcy threat. The next day, on 15 September 2008, the fourth biggest U.S. investment bank - Lehman Brothers - filed for bankruptcy

⁷⁵ On June 22, 2007, Bear pledged a collateralized loan up to 3.2 billion to bail out one of its funds, the “Bear Stearns High-Grade structured credit fund”, while negotiating with other banks to loan money against collateral to another fund, the “Bear Stearns High-Grades structured credit enhanced leveraged fund”. Bear had originally put up just 35 million, so they were hesitant about the bailout, however, its CEO James Cayne and other senior executives were worried about the bankruptcy of its subsidiary funds would damage the company’s reputation. However, the deteriorating market rapidly made the two funds valueless and out of the Bear’s ability to save them. See Bryan Burrough, “The Collapse Bring down Bear Stearns,” Vanity Fair online press, August 2008, available at <http://www.vanityfair.com/politics/features/2008/08/bear_stearns200808> (last visited 15 March 2015).

⁷⁶ See FCIR supra 69, “Final report of the National commission on the causes of the financial and economic crisis in the united states,” p. 280.

⁷⁷ Ibid, p. 280.

⁷⁸ The Fed agreed on March 14 to give emergency funding to Bear Sterns. Yet, during the weekend, the Fed officials helped arrange a takeover by JP Morgan Chase at a fraction of Bear’s market value. More details see, Yalman Oaran, “Fed Aided Bear Stearns as Firm Faced Chapter 11, Bernanke Says,” Bloomberg Report, available at <<http://www.bloomberg.com/apps/news?pid=newsarchive&refer=worldwide&sid=a7coicThgaE>>, (last visited on 15 March).

protection after a string of fruitless capital injection efforts.⁷⁹ On 16 September, the world largest insurance giant AIG exhausted its liquidity and applied for the government bailout mainly because of the derivatives trading against the mortgage-related assets. Everybody shocked as the financial tsunami was coming. When the heart of the financial system shut down, the whole capital market abruptly contracted. In a borderless financial world, the financial tsunami rapidly spread to the main financial centers. The stock market indexes plummeted steeply in the main global stock exchanges, ranging from US, the Europe and the Asia.⁸⁰

After reviewing the breakout process of the crisis, we are convinced that the excessive and irrational grant of subprime mortgage loans is the direct reason of the 2007 Subprime crisis, and then the 2008 financial crisis. Then, what is the role CDSs played in this crisis? We are going to analyze that CDSs facilitated the granting of subprime mortgage loans which could be one of the underlying factor of the subprime crisis. Furthermore, we are going to argue that the CDSs transactions exacerbated the crisis because on the one hand excessive CDSs transactions magnified the losses related to subprime mortgages loans, and on the other hand irrational CDSs trading paralyzed the financial system important institutions.

2. CDSs promoted the breakout of the 2008 financial crisis

As we have described the losses in subprime mortgage loans is the direct reason of the bankruptcy or near-bankruptcy of many banks during the crisis. But, we would

⁷⁹ John C. Hull, "Options, Futures, and Other Derivatives," Pearson, 2012, p.3. (Stated that "the Lehman bankruptcy was the largest bankruptcy filing in the U.S. history. Almost until the end, it seemed as though there was a good chance that Lehman would survive. A number of companies e.g. the Korean Development Bank, Barclays Bank in the UK, and Bank of America, expressed interest in buying it, but none of those were able to close a deal. Many people thought that Lehman was "too-big-to-fail" and that the US government would have to bail it out if no purchaser could be found. But it turned out not to be the case.); ECB, supra 19, p. 31-32 (analysts highlight three important differences between Lehman's case and the government bailout of Bear Sterns: (i) Lehman brothers' business mix differs from that of bear sterns; (ii) there would be less systemic risk were Lehman Brothers to fail, as financial institutions have had six months to prepare for that failure; and (iii) the federal Reserve now has in place an emergency liquidity facility allowing Lehman Brothers to wind down its business operations in a way that will not cause shocks on the markets).

⁸⁰ See FCIC, supra 69, "Final report of the National commission on the causes of the financial and economic crisis in the united states," p.16

wonder that why these banks extended so much mortgages to the subprime householders? And though the housing market is upside before the crisis, didn't the mortgage lenders worry about the credit risk of the subprime debtors? After inquiry, we found that the credit risk could be swiftly shifted through securitization or derivatives transactions. Thus, the mortgage loan banks thought they could appropriately manage the risk while reaping benefits from extending mortgages to subprime householders.

2.1 Securitization changed the traditional counterparty credit risk control model of extending mortgages

Firstly, banks could transfer the risk of subprime mortgages through securitization mechanism. In the mortgage securitization market, there are two main kinds of securities, namely Mortgage Backed Securities (MBS) and Collateralized debt obligations (CDOs). MBSs are securities directly derived from the mortgage loans through the securitization process, while CDOs are more complicate, whose underlying assets could be MBSs and other asset-backed securities. It is therefore that CDOs are usually called "re-securitization financial products."⁸¹ Although this difference, the securitization process is almost the same, and most importantly, both these products transferred the credit risk of mortgage loans to the securities holders. The securitization of loans is a big step in financial market. In the 1960s, U.S. banks found they could not keep pace with the market demand for residential mortgages with their own capitals, most from the deposits of their clients. Under this background, the mortgage-backed securities market developed.⁸² The rapid growth of this industry happened from 2000 to 2006, and this period was characterized as a huge increase in what is termed subprime mortgage lending.⁸³ Thus, the subprime mortgage loans

⁸¹ See BIS, "2007 Annual Report," 2008, p.5. (Stating that "CDO on subprime mortgages was developed on the base of MBSs, so it is also called "re-securitization", in other words the structure of CDOs consist of a double-layered securitization process.")

⁸² See John C. Hull, *supra* 81, "Options, Futures, and Other Derivatives," p.180.

⁸³ *Ibid*, p.184.

granted in this period were mostly transformed into MBSs or other related securities. These securities were very popular in the financial market, especially the MBSs and CDOs created by the quasi-governmental agencies, like, Fannie Mae, Freddie Mac and Ginnie Mae.⁸⁴ To illustrate this securitization process, let us take a simplified example. First of all, the bank extended subprime mortgage loans to, for instance, 100 householders, itemized as 1, 2, 3 ... 99 and 100. The total value of these loans equals to 100 million dollars. To securitize them, this bank packaged the loans and sold the package to a Special Purpose Vehicle (SPV), which is an independent legal entity, usually created by the bank due to the consideration of “bankruptcy isolation,” from the bank per se.⁸⁵ So, the bank assigned the ownership of the mortgage loans to the SPV for exchange of cashes. Then, in order to provide funds to purchase the packaged 100 subprime mortgages loans, the SPV opens the securitization machine, issuing MBSs based on these package loans. In order to cater for different risk appetites of investors,⁸⁶ the SPV will divide the MBSs into different tranches with different-level of loss priority. Usually, the MBSs or CDOs would be sliced into at least three tranches: i.e. the senior tranche, the mezzanine tranche and the equity tranche. And in this case, the 100 million dollars value underlying assets will be the collaterals for the future cash flow to the sliced MBSs, and according to which 80 million dollars senior tranche MBSs (rated as AAA rating grade), 15 million mezzanine tranche MBSs

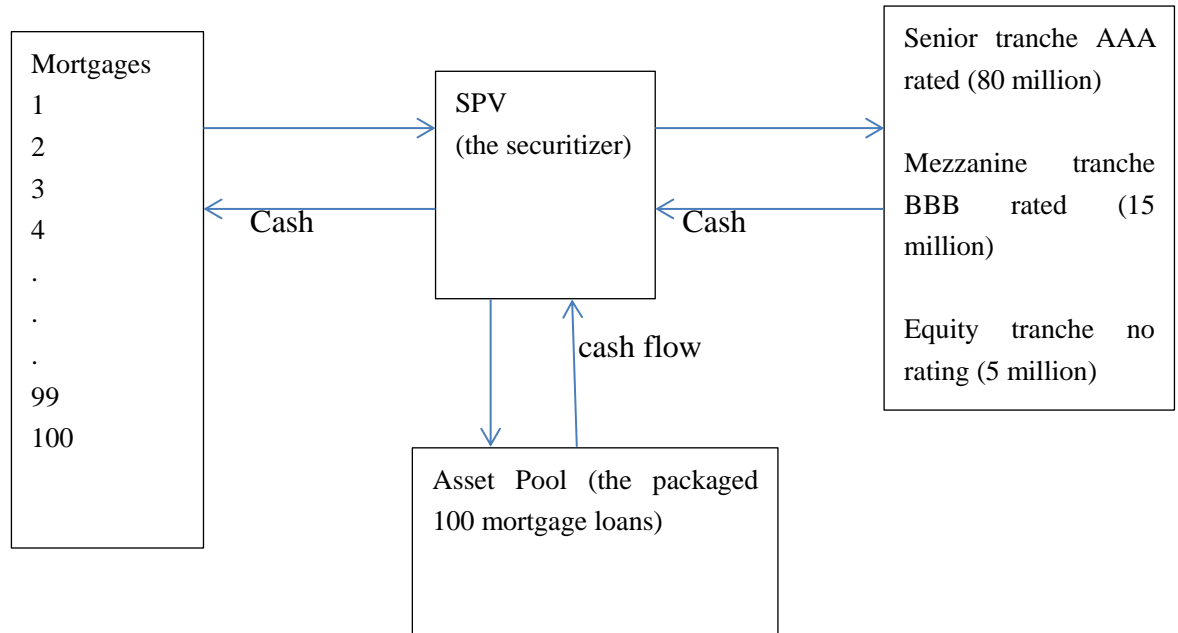
⁸⁴ These three agencies were backed by the Federal government, so those who bought a Fannie Mae or Freddie Mac MBS knew they would get something in return for their investment. Ginnie Mae even absolutely guaranteed that investors would receive their payments. See SEC, “Mortgage-backed securities,” available at <<http://www.sec.gov/answers/mortgagesecurities.htm>> (last visited on 15 March 2015).

⁸⁵ See Gary Gorton et al., “Special Purpose Vehicles and Securitization,” FRB Philadelphia Working Paper No. 05-21, 2006, available at <<http://www.nber.org/chapters/c9619.pdf>> (last visited on 15 March 2015), (Commented that “an SPV is a legal entity created by a firm, known as the sponsor or originator, by transferring assets to the SPV, to carry out some specific purpose or circumscribed activity, or a series of such transactions. SPVs have not purpose other than the transactions for which they were created. And they can make no substantive decisions; the rules governing them are set down in advance and carefully circumscribe their activities. Indeed, no one works at an SPV as it has no physical location.”)

⁸⁶ Usually in this market, the hedge funds are more risk-prone investors may invest in more risky mezzanine tranche MBS, whereas pension funds may prefer the high rated AAA or AA tranches. See Sarai Criado et al., “Structured Finance and the Financial Turmoil of 2007-2008: An Introductory Overview,” Bank of Spain Working Paper Series, No. 0808, 2008.

(rated as BBB), and 5 million equity tranche MBSs (no rating) would be produced.⁸⁷
 (See below the Chart 6 on the securitization process) Pay attention that the CDO discussed here is cash-flow CDO, not Synthetic CDO.⁸⁸

Chart 6: The securitization process



Before the crisis, the senior tranche MBSs were very popular because of its high credit rating, whereas the mezzanine tranches were less attractive for investors.⁸⁹ And the SPV would maintain the equity tranche on its own book due to its very low or no credit rating. So, in order to sell out as much as possible the MBSs, these lower rated MBSs were re-securitized into CDOs.⁹⁰ For example, the mezzanine MBSs in the case above would be re-securitized. Commonly, for instance, 65% of the mezzanine

⁸⁷ See John C. Hull, supra 81, "Options, Futures, and Other Derivatives," p.181.

⁸⁸ See Sarai Criado et al., supra 88, (A "cash flow" CDO, is a "true-sale" CDO, which means that the originator (investment bank) actually sell the asset pool of MBS and other assets to the SPV. In contrast, in the structure of a Synthetic CDO, the SPV does not acquire the portfolio of the underlying debt instruments, but just sells credit default swaps to the banks that pooled the assets.)

⁸⁹ See John Hull, supra 81, "Options, Futures, and Other Derivatives," p.183.

⁹⁰ See Brendan Sapien, "Financial Weapons of Mass Destruction: From Bucket Shops to Credit Default Swaps," 19 Southern California Interdisciplinary Law Journal 411, p.423, (Stating that "in order to sell out as much as possible the mortgage backed securities, especially the lower grade MBS tranches, Wall Street investment firms believed they had discovered a way to profit off these mortgages with little risk to an investor. They began to offer Collateralized debt obligations (CDOs) to eager investors and banks.")

tranche MBSs could be re-securitized into AAA rated senior tranche CDOs, 25% of which will be turned into mezzanine CDOs, and the last 10% would become equity tranche CDOs after the second securitization process. This means that 90 million dollars, that is $[100 \text{ million} * (80\% + 65\% * 15\%)]$, AAA rated securities related to the original 100 mortgage loans would be produced ultimately.⁹¹ (See the re-securitization process in Chart 7 below) The riskier CDOs are popular for those more eager investors, such as hedge funds. In a short time, big names on the Wall Street, i.e. Bear Stearns, Citigroup, Lehman Brothers, Goldman Sachs, Merrill Lynch and so on, all highly participated in the production of MBSs and CDOs. On the one hand, they thought they could make huge commission fees through the securitization process, as usually called the Originate-to-Distribute (OTD) model, on the other hand the underlying risk of subprime mortgages could be mostly transferred to the securities holders. However, the crisis manifested that, in effect, the risk had not been shifted to others, rather mostly remained in these investment firms. Professor Hull observed this and clearly indicated the reason. He argued that while the securitization department originated and distributed these mortgage-related securities, the asset management department of these investment firms bought back such kind of securities.⁹²

We believe that the securitization of mortgage loans contributed to the breakout of the crisis, for that through the securitization process the credit chain in relation to subprime mortgages was prolonged. Traditionally, banks who grant loans directly monitor the creditworthiness of the loanees in order to avoid credit risk. However, this counterparty-risk control model has been changed. Due to the securitization, local

⁹¹ See John Hull, *supra* 81, "Options, Futures, and Other Derivatives," p.183.

⁹² See *Ibid* p.189. (Arguing that "Many of the mortgages were originated by banks and it was banks that were the main investors in the tranches that were created from the mortgages. Why would banks choose to securitize mortgages and then buy the securitized products that were created? The answer concerns what is termed "regulatory arbitrage." The regulatory capital banks were required to keep for the tranches created from a portfolio of mortgages was much less than the regulatory capital that would be required for the mortgages themselves.") See also FCIC, *supra* 69, "Final report of the National commission on the causes of the financial and economic crisis in the united states," p.24, (Stating that "When borrowers stopped making mortgage payments, the losses –amplified by derivatives – pushed through the pipeline. As it turned out, these losses were concentrated in a set of systemically important financial institutions.")

mortgage banks could sell the loans to the Wall Street investment banks for securitization. And the Wall Street banks sold the mortgage loans to the SPVs, then SPV securitize the underlying mortgages into MBSs or CDOs, which would be further sold to the securities market. Hence, the banks directly extended mortgage loans would probably decrease their loan-granting standards, given that they, in turn, will sold them out to the securitizers.⁹³ This is exactly the scenario before the crisis. Excessive subprime mortgages, that should not have granted, were extended. The total amount of mortgage-backed securities issued almost tripled between 1996 and 2007, to 7.3 trillion dollars. The securitized share of subprime mortgages, i.e., those passed to third-party investors via MBSs, increased from 54% in 2001, to 75% in 2006.⁹⁴ A sample of 735 CDO deals originated between 1999 and 2007 showed that subprime and other less-than-prime mortgages represented an increasing percentage of CDO assets, rising from 5% in 2000 to 36% in 2007.⁹⁵ The mortgage-backed securities directly promoted the propagation of US housing bubble that burst in 2007.⁹⁶

2.2 CDSs facilitated the securitization process

As we have mentioned above, mortgage-related securities were mostly bought by financial institutions, like the investment banks themselves, the hedge funds, common funds and others. These sophisticated mortgage-related securities holders did realized the potential risk of buying these securities, especially after 2006 when the housing market is changing. But they did not stop creating and buying the mortgage-backed

⁹³ A typical “moral hazard” was generated in this process. When considering new mortgage applications, the question was not “Is this a credit we want to assume? Instead it was “is this a mortgage we can make money on by selling it to someone else. See John C. Hull, *supra* 81, “Options, Futures, and Other Derivatives,” p.186.

⁹⁴ Yuliya Demyanyk & Van Hemert. "Understanding the Subprime Mortgage Crisis", Working Paper Series. Social Science Electronic Publishing.

⁹⁵ Anna K. Barnett-Hart, “The Story of the CDO Market Meltdown: An Empirical Analysis,” March 2009, available at <<http://www.hks.harvard.edu/m-rcbg/students/dunlop/2009-CDOmeltdown.pdf>> (last visited on 15 March 2015).

⁹⁶ You might wonder that the securitizers, i.e the investment firms or the SPVs would care about the quality of the underlying mortgage loans. This question is just theoretically existed. In practice, the securitizers could get high credit rating for the MBSs or CDOs they created because the rating agencies, like Moody’s and S&P, were paid by these securitizers. “The half of the rating agencies’ income, before the crisis, came from rating these mortgage-related securities.” see also, John Hull *supra* 81, p.190.

securities. Instead, they turned to the CDSs market, buying risk protections against these assets. This seems a conventional strategy in the market. Media, like Chicago Public Radio, Huffinton Post, and ProPublica etc., reported that market participants, including the hedge fund Magnetar Capital, encouraged the creation of CDOs containing low quality mortgages, as they could bet against them using CDS, and they encouraged their clients to purchase CDOs while simultaneously betting against them, while without legal obligation of disclosing the latter bet.

In short, mortgage-related securities investors could buy CDSs protection against the default of these securities, hence CDSs helped to expand the market for the creation of MBSs and CDOs. Therefore, the securitization of mortgages and the buying of CDSs protection are the two crucial nodes in this credit chain of mortgage loans. In practical, huge amount of CDSs had been issued against the mortgage-backed securities. While CDSs just came into existence in the mid-1990s, their development was exactly in line with the growth of the mortgage-backed securities, which peaked in 2007 to 57 trillion dollars of outstanding value. An extreme case is that AIG solely sold out near 80 billion CDS protection against CDOs. Thus, as also concluded by the report of the Financial Crisis Inquiry Commission, in January 2011, the CDSs facilitated the securitization of mortgage loans, and from doing so fueled the U.S. housing bubble.

3. CDSs exacerbated the 2008 financial crisis

3.1 CDSs magnified the losses relating to subprime mortgages

CDSs, as an investment instrument, underwrote by the CDSs sellers in relation to the underlying mortgage-backed securities, could amplify the financial losses. In this regard, we are going to explain this argument from the selling of Synthetic CDOs. From 2006, Synthetic CDOs began to play a more active role in the marketplace. According to the U.S. 2011 Financial Crisis Inquiry Report, “before the crisis, firms like Goldman Sachs found that it is cheaper and easier to create Synthetic CDOs than

traditional CDOs as the supply of mortgages was beginning to dry up.”⁹⁷ In other words, since from 2006 when the US housing market was changing to the downside, fewer mortgages could be extended. And therefore the MBSs and CDOs became more expensive and less available. In this circumstance, Wall Street firms, like Goldman, Morgan Stanley firstly began to issue synthetic CDOs. The synthetic CDOs catered for investors’ appetite in mortgage related securities. Even more convenient, compared to MBSs, Synthetic CDOs were more customized, because CDO managers and underwriters could reference any mortgage-backed securities, and even a portfolio of mortgage-backed securities.”⁹⁸

Be different with the structure of traditional CDOs, the originator banks, i.e. the investment firms, of synthetic CDOs do not really transfer the underlying assets to the SPVs, while they intend to shift the credit risk of the underlying assets to the latter. In achieving this goal, the investment firms could buy CDS protection in relation to the underlying mortgage loans or securities. In exchange, they shall pay a sum of protection fees to SPVs. Just based on the CDSs contracts and its related reference underlying assets, SPVs create tranching CDOs with different credit rating grades, like the same process in producing normal CDOs. Then SPVs used the CDSs premium fees and the cash-flow from CDO investors to purchase high quality assets, like the U.S. Treasury bond. The purchased assets will be put into an asset pool as collaterals for compensating the originator banks if credit events happen. If no credit events happen, the assets in the pool would be liquidated and pay the principal and interests to the synthetic CDO holders.⁹⁹

However, the most important difference with cash-flow CDOs, i.e. the traditional CDO securities, lies in that creating Synthetic CDOs does not require the originator banks really possess the underlying mortgages. This means the SPVs could create as many as possible synthetic CDOs with reference to any mortgage-backed securities

⁹⁷ FCIC, supra 69, “Final report of the National commission on the causes of the financial and economic crisis in the united states,” pp.142-43

⁹⁸ See Ibid, pp.142-43.

⁹⁹ See Sarai Criado et al., supra 88 “Structured Finance and the Financial Turmoil of 2007-2008: An Introductory Overview,” 2008. More information of this process see chapter 1.

they prefer, only if they could find the buyers.¹⁰⁰ Synthetic CDOs actually let the originator banks and investors betting on the default risk of the referred underlying assets, including mortgage-backed securities. This market is also very big. For example, according to the FCIC report, Goldman Sachs alone packaged and sold 73 billion dollars in synthetic CDOs from July 1, 2004, to May 31, 2007.¹⁰¹ And it could be affirmed that these Synthetic CDOs created by Goldman referenced more than 3,400 mortgage securities, and 610 of them were referenced at least twice, which means speculation transactions largely existed.¹⁰² Although lack of accurate statistics due to the opaqueness of the CDS market, we could assume that the creation of “naked synthetic CDOs,” i.e. the CDOs without underlying mortgage securities, is commonly executed by other investment banks, such as Morgan Stanley etc.. The consequence of selling naked synthetic CDOs is that more mortgage-related securities that should not have existed were created and sold out to the financial market. Hence, when abundant defaults occurred in the mortgage market, the artificially created synthetic CDOs amplified the losses related to subprime mortgage loans.

3.2 CDSs pushed down Systemically Important Financial Institutions (SIFIs)

Systemically important financial institutions (SIFIs) locate in the center of the whole financial system. Not just their market scale but also their wide connectedness with other players in the financial market make them crucial important to the whole financial system. The fail down of a SIFI would immediately affect the stability of the financial market. In retrospect, the 2008 financial crisis upgraded substantially after the bankruptcy of Lehman Brothers. And when the insurance giant AIG asked for governmental bailout, the financial market participants and also the US government

¹⁰⁰ Michael Lewis, “Betting the Blind Side,” Vanity Fair, 2010. (“A theoretically infinite amount could be wagered on the same housing-related securities, provided buyers and sellers of the CDS could be found.”)

¹⁰¹ FCIC, supra 69, “Final report of the National commission on the causes of the financial and economic crisis in the united states,” pp.24-25

¹⁰² Ibid, p.25.

were shocked. The Crisis peaked afterwards.

As described above, several Wall Street SIFIs bankrupted or on the brink of bankruptcy in this crisis, firstly Bear Sterns in spring 2008, and then Lehman Brothers, Merrill Lynch, AIG in autumn that year. However, it is commonly agreed that the failure of these Wall Street investment banks was mainly due to the losses in risky mortgage-related securities, not mainly in CDSs trading.¹⁰³ We agree on this conclusion, rather as already explained mortgage-related securities directly pushed down these investment banks, but CDSs indirectly played the same role. This is because that, though actively participated in CDSs transactions, these investment banks played the role of both sellers and buyers. Thus, the risk exposure regarding the mortgage-backed securities could be partially set off. For instance, Lehman Brothers was one of the biggest CDSs market participants. It had hundreds of thousands transactions outstanding with about 8,000 different counterparties. Yet when Lehman bankrupted, it was even the in-the-money party after netting these CDSs transactions. However, this is not the situation for the pure CDSs protection sellers, like AIG and other monoline insurance companies. For example, the net risk exposure of AIG due to the CDSs contracts with reference to mortgage-backed securities was incredibly huge when it applied for emergent bailout. Actually, the CDSs on MBSs and CDOs were not sold by the AIG itself, but its financial product subsidiary, i.e. AIGFP that was based in London. By the year-end 2007, the AIGFP had sold out about 533 billion dollars net notional value of outstanding CDSs contracts.¹⁰⁴ This number is more than 5 times of its parent company AIG's total equity value at that time.¹⁰⁵ According to

¹⁰³ See e.g., Houman B. Shadab, "Guilty by Association? Regulating Credit Default Swaps," 4 *Entrepreneurial Business Law Journal* 407, (Stating that "The financial crisis is primarily the result of the economy wide mispricing of mortgage-related debt securities such as CDOs and not primarily the result of the utilization and growth of credit derivatives such as CDSs.") also e.g., Jeremy C. Kress, "Credit Default Swaps, Clearing Houses, and Systemic Risk: Why Centralized Counterparties Must Have Access to Central Bank Liquidity," 48 *Harvard Journal on Legislation* 49, (It is argued that "it is undisputed that losses on mortgage securities, not CDS, led to the bankruptcy of Lehman Brothers and the bailout of Bear Sterns.")

¹⁰⁴ Scott E. Harrington, "The Financial Crisis, Systemic Risk, and the Future of Insurance Regulation," *Journal of Risk and Insurance*, Vol. 76, Issue 4, December 2009, p.793.

¹⁰⁵ The capital information of AIG, See Wikipedia, available at <http://en.wikipedia.org/wiki/American_International_Group> (last visited on 15 March 2015)

its own financial report, 71% of its huge CDSs exposure could be categorized as representing “regulatory capital” contracts, which generally offered protection against credit-related losses on corporate loans and prime residential mortgages.¹⁰⁶ The remainder of AIGFP’s CDS portfolio was classified by itself as “arbitrage” contracts. By the end of 2007, the arbitrage CDS portfolio was divided between CDSs on CDOs, which amounted to \$ 78 billion. And CDSs on collateralized loan obligations that about \$ 70 billion. Most of the CDOs were written on “super senior” tranches of the underlying MBS and CDO securities, of which \$ 61 billion included exposure to subprime mortgages.¹⁰⁷

In fact, by the end of 2005, AIGFP actually realized that the underwriting standards for subprime mortgage loans had been unreasonably deteriorated, so a decision had been made to stop writing CDS contracts on the risky multi-sector CDOs. Nevertheless, AIGFP did nothing to hedge this existed risk.¹⁰⁸ Till the end of 2007, its risk exposure to multi-sector CDSs was still around 80 billion dollars. With the rapid deterioration of the American housing market in 2007, rating downgraded in relation to these “super senior” multi-sector CDOs. AIGFP was forced to post large amounts of collaterals to its counterparties. The financial situation of AIG deteriorated very quickly. It is reported that AIG lost a sum amounted to 13 billion dollars due to the write-downs of mortgage-related CDSs contracts for the fourth-quarter of 2007 and the first-quarter of 2008. In AIG’s report of August 2008 for the second quarter of this year, it was disclosed that 17 billion dollars value collaterals, mostly cash and Treasury bonds, had been posted for its CDSs counterparties.¹⁰⁹

AIG’s liquidity capital depleted very quickly due to the increased collateral

¹⁰⁶ Ibid.

¹⁰⁷ See Scott E. Harrington, *supra*106, “The Financial Crisis, Systemic Risk, and the Future of Insurance Regulation,” (It is meanwhile argued by Prof. Harrington that “The buyers of the AIG swaps, and those sold by investment banks, were engaging in regulatory arbitrage to reduce their required capital during transition to the new requirements under Basel II, which would allow the largest banks to reduce required capital based on internal capital model.)

¹⁰⁸ See Jack Bouboushian, “Mutual Funds Sue AIG for billions,” Courthouse News Service, 8 August 2013.

¹⁰⁹ This was disclosed in AIG’S 10-Q regulatory filing as of August 2008. See ECB, *supra* 69, “CDS and Counterparty Risk,” p.29.

requirements. And this process was even accelerated by the downgrade of its credit rating. On the September 15 2008, S&P downgraded AIG's long-term debt rating by three notches. Both Moody's and Fitch downgraded AIG's long-term debt rating by two notches. As a result, AIG estimated that it would need an emergent sum of 20 billion dollars for funding collateral demands and termination payments due to the CDSs transactions in the following several weeks.¹¹⁰ This amount was already over its liquidity capital. In this circumstance, AIG had to request the governmental emergency bailout otherwise this giant company would fall into bankruptcy. In light of the systemic importance of AIG, the U.S. government had to bail it out, which promptly decided to inject emergent fund of 85 billion dollars to AIG. Soon after that, the U.S. Federal Reserve injected to it another bailout fund of 67 billion dollars, and the bailout amounted to 180 billion dollars ultimately.¹¹¹ Even though AIG survived and a sudden shut-down of the financial system was avoided, the financial market was greatly affected. Panic spread throughout the system. Confidence suddenly disappeared, which is a fatal strike to the financial system.

3.3 CDSs resulted in systemic-risk threat to the financial system

Why panic could spread throughout the financial system when AIG failed into liquidity crisis? We believe that the CDSs transactions have weaved the financial system into a tightly interconnected network,¹¹² the bankruptcy of AIG if without the bailout, could trigger a systemic meltdown. The scenario is like a "domino effect," that counterparties of AIG would incur losses and then the counterparties of these counterparties would suffer losses. In the peak of the crisis, such systemic-risk threat

¹¹⁰ Ibid, p.29.

¹¹¹ The President of the United States Obama directly supported the bailout to AIG, said: "I actually think it was a right decision made by the Fed ... AIG had insured a whole bunch of losses of a whole bunch of banks that had made bad bets on subprime mortgage loans ... had AIG been allowed to simply liquidate and go bankrupt, all those banks who were counterparties with AIG would have experienced such big losses that it would have threatened the entire financial system." See, President Barack Obama, "Remarks by the President upon Departure," Mar. 18, 2009, available at http://www.whitehouse.gov/the_press_office/Remarks-of-the-President-Upon-Departure/ (last visited on 15 March 2015)

¹¹² Regarding to the detailed discussion about the concentration and interconnectedness of the CDSs market, please refer to section 7 of Chapter 1.

greatly exacerbated the crisis, given that every market participants was worrying about whether their counterparties trapped into questionable CDSs transactions and would be insolvent. Thus, no one would like to extent credit to others any more. This is a fundamental reason why the confidence of the market disappeared.

Systemic risk has been scientifically defined by Professor Steven Schwarcz. The systemic risk means that (i) an economic shock such as market or institutional failure triggers (through a panic or otherwise) either (X) the failure of a chain of markets or institutions or (Y) a chain of significant losses to financial institutions, (ii) resulting in increases in the cost of capital or decreases in its availability, often evidenced by substantial financial-market price volatility.¹¹³

According to his definition, we could be assured that the CDSs trading exactly caused systemic risk if institutions like AIG failed, and this is also the concern of the US government that promptly decided to bail AIG out. But as just argued, the panic spread through the market because CDSs have made the financial institutions in a network, thereby risk could disseminate from one to another.

However, this is just possibility because if the counterparties know exactly the information of their counterparties CDSs transactions, this widespread market panic might not developed. Hence, we consider that the opaqueness of the market is one of the critical prerequisites of forming the systemic risk. Unfortunately, the unregulated CDSs market is extremely opaque. So the financial institutions in the market stopped their credit lending and other transactions due to the fear of probable losses of CDSs trading their counterparties could suffer. As Economist Joseph Stiglitz summarized, “how credit default swaps contributed to the systemic meltdown: with the complicated intertwining of bets of great magnitude, no one could be sure of the financial position of anyone else, or even of one’s own position. Not surprisingly, the credit markets froze.”¹¹⁴ In this sense, the CDSs trading also exacerbated the 2008 financial crisis.

¹¹³ Steven L. Schwarcz, “Systemic Risk,” *The Georgetown Law Journal*, Vol. 97:193, p.204

¹¹⁴ Joseph E. Stiglitz, “Capitalist Fools,” *Vanity Fair*, January 2009, available at <<http://www.vanityfair.com/magazine/2009/01/stiglitz200901>> (last visited on 26 February 2015).

4. Conclusion

Till now, we have analyzed the relationship between CDSs and the 2008 financial crisis. Generally speaking, this relationship is two folds, namely on the one hand, CDSs facilitated the creation and selling of mortgage-backed securities, which drove the banks to grant more subprime mortgage loans. Thus, the U.S. housing bubble was irrationally propagated and huge risk accumulated. In this process, CDSs promoted the happening of the 2008 financial crisis. On the other hand, CDSs exacerbated the crisis when it erupted. In this regard, CDSs are imputable for three reasons. First, speculative CDSs transactions, such as naked synthetic CDOs, multiply amplified losses relating to mortgage-backed securities. Second, CDSs trading directly pushed down systemic important financial institutions, especially the AIG, which directly escalated the crisis. Third, opaque CDSs transactions weaved the financial system into a tightly interconnected network, thus potential systemic risk had been created. Due to the opaque, risky and interconnectedness of this market, panic easily spread over the financial system, and the financial system suddenly froze.

It is time for conclusion, but also for advancing questions. For legal scholars, we wonder that what is the role of law in this financial crisis? Excessive speculative CDSs on mortgage-backed securities were issued, which promoted and exacerbated the crisis. Why the law did not inhibit the speculative CDSs transactions? The insurance giant AIG traded huge number of CDSs that far more exceeded its capital. Why there is no effective law to control hazardous operation of this company that is systemically important? Also it is strange that why the counterparties suddenly requested huge scale of collaterals from AIG, and before the market went downside they did not ask collaterals from AIG? Moreover, when AIG is on the brink of bankruptcy, why its counterparties could possess those collaterals from AIG, Did the bankruptcy law debtor-protection rule not function? Taking these questions, we are going to looking into the legal origins of this crisis in relation to CDSs transactions. Whatever, we believe that the legal environment for CDSs transactions is the fundamental institutional reason as to this crisis.

Part II CDSs and the 2008 Financial Crisis: the Legal Origins

Chapter 3 The Abrogation of the Common law Doctrine of “Difference Contract”

From this chapter we are beginning to analyze the underlying legal origins of the 2008 crisis. The first question shall be analyzed is what is the legal reason that excessive speculative CDSs could be traded? In other words, why the law did not limit too much speculation of CDSs?

Before the crisis, the CDSs grew from nil in 2000 to a near 60 trillion dollars market. Speculation, rather than hedging, dominated this market. Hence, it could be assumed that legal rules facilitated the proliferation of speculative transactions. However, are these legal rules justified, or should these opt-speculative legal rules be preserved after the crisis? After investigating the legal history in relation to regulating the Over-the-Counter (OTC) derivatives, we found that speculations on OTC derivatives were once prohibited by an important common law doctrine of “difference contracts.” However, this doctrine was abruptly repealed in the U.S. Commodity Futures Modernization Act (CFMA), which was enacted in 2000 under the lobby of the derivatives industry. In this chapter, we are going to inquiry how this traditional common law doctrine against speculative derivatives trading was abrogated, and we argue that the abrogation of which gave legal certainty of speculative transactions on CDSs. Afterwards, the CDSs market became dominated by speculation transactions in a very short time span. So, firstly, we will look into this common law doctrine of “difference contracts” and its legal effects.

1 Elaborate the common law doctrine of “difference contracts”

1.1 Definition and historical origin

In a historical perspective, the term of “difference contract” was born in the nineteenth century, which specifically refers to speculative commodity derivatives traded over-the-counter. Namely, the counterparties of the commodity derivative contracts do not have the intention to deliver the underlying goods of the contracts, such as rice, but for betting the price change of the underlying goods in the future. The winner would reap the difference of the prices, so this is why speculative derivatives contracts were called “difference contracts.” Be different with hedging commodity derivative contracts, for example a forward contract of wheat, usually the farmers would be the forward contracts buyers, fixing a future price of the wheat of certain quantity with the forward contracts sellers. In doing so, the price fall risk for the farmers would be hedged. If the contract seller is a miller that needs wheat in the future, also his risk will be fixed as the production cost could be managed. Therefore, in essence, the “difference contracts” are those OTC derivatives contracts, in which neither of the counterparties have the existed risk with the reference entities. In economic view, they are no difference with bets.¹¹⁵ Nowadays, the term of “difference contract” is rarely seen. Instead, it has been basically replaced by the more common term: “speculative contracts.”

In judicial history, there were not consistent judgments towards the validity of “difference contracts” until the second half of the nineteenth century in the U.S. common law. The judgments were often conflicting with others among different states

¹¹⁵ In this regard, see the description by Lynn Stout, “Derivatives and the Legal Origin of the 2008 Credit Crisis,”¹ Harvard Business law Review 1,2011, p.10-11 (Professor Stout even argued that all the derivatives are bets, stating that “the essence of all derivatives is easily captured. Derivatives are contracts, in particular the types of contracts often described by the short word bets, or wager.. Derivatives are literally bets – agreements between parties that one will pay the other a sum of money that is determined by whether or not a particular event occurs in the future.”)

of the America.¹¹⁶ This uncertainty was changed in 1884, when a famous judgment was made by the Supreme Court of the United States in relation to the case of *Irwin v. Williar*.¹¹⁷

In this case, Judge Matthews wrote that: “the generally accepted doctrine in this country is, as has been stated by Judge Benjamin, that a contract for the sale of goods to be delivered at a future day is valid, even though the seller has not the goods nor any other means of getting them than to go into the market and buy them; but such a contract is only valid when the parties really intend and agree that the goods are to be delivered by the seller and the price to be paid by the buyer. And if, under guise of such a contract, the real intent be merely to speculate in the rise or fall of prices, and the goods are not to be delivered, but one party is to pay the other the difference between the contract price and the market price of the goods at the date fixed for executing the contract, the whole transaction constitutes nothing more than a wager, and is null and void.”¹¹⁸

Therefore, the rule of “difference contracts” had been clearly articulated in this judgment. Namely, firstly the counterparties shall have the intention to deliver the underlying goods, and secondly, actual delivery shall be executed when the contract is due. After this case, the doctrine of “difference contract” in American common law had been established and accepted by all the states.

It is notable that based on this principle the ambit of “difference contracts” were further clarified by the advancement of the term of “purely speculative contracts,” in which neither party was seeking to reduce risk but was seeking profits in price difference.¹¹⁹ Namely, in a purely speculative contract, both counterparties are

¹¹⁶ Albert C. Stevens, “Futures in the Wheat Market,” *Quarterly Journal of Economics*,” Vol.2, No.1, 1887, p.44. (Stating that “the validity of contracts for future delivery has been the subject of conflicting decisions in the State courts.”)

¹¹⁷ See *Ibid*, p.44.

¹¹⁸ *Ibid*, p.44.

¹¹⁹ See Lynn Stout, *supra*117, “Derivatives and the Legal Origin of the 2008 Credit Crisis,” 2011, p.11 (stating that “the English and American common law legal systems traditionally addressed the welfare implications of derivatives trading through the interesting strategy of distinguishing between hedging agreements in which at least one of the parties was seeking to reduce risk and purely speculative contracts between two parties each seeking trading profits.”)

speculators, and neither counterparties hedge a pre-existed risk.¹²⁰ Meanwhile, the contracts that one party is a hedger and the other is a speculator (non-purely speculative contracts) are categorized into hedging-purpose derivatives contracts that are protected by law.¹²¹

Hence, the common law has seen and appreciated the value of hedging to economy, and tolerated a part of people entering into the commodities market with speculative intention. Besides, there exists an important exemption of this generally unenforceability principle. Even if neither party to a derivative contract expected to take delivery of the goods underlying the contract, courts nevertheless would still enforce the contract if one party had some preexisting economic interest in the underlying good that would be damaged by the very same event that would allow it to profit under the contract.¹²² This “indemnity” exception is similar with the “insurable interest” principle in the modern insurance law, which is only if the policy holder actually suffers a loss related with the insurance contract, the contract is a valid insurance policy.¹²³

1.2 Consequences of the common law doctrine of “difference contracts”

The direct consequence of this “difference contracts” doctrine is that speculative contracts on commodities will be void in law and will not be supported by the public court if one party of the contract defaults. But, the “difference contracts” were not prohibited by the common law, namely the speculators would not be punished if they carry on speculation activities. However, if the speculators want their contracts to be

¹²⁰ See Timothy E. Lynch, “Gambling by Another Name; the Challenge of Purely Speculative Derivatives,” *Stanford Journal of Law, Business and Finance*, Vol.17, No.1, 2012, p. 82.

¹²¹ Lynn Stout, “Why the Law Hates Speculators,” 48 *Duke Law Journal* 701, 1999, p.741, (professor Stout points out that “heterogeneous expectations” is the main reason of the parties entering into such contracts. The heterogeneous expectations model of speculation begins with the assumption that individual’s predictions for future prices can differ markedly; where a bull believes that prices are sure to rise, a bear predicts a fall.)

¹²² See *Ibid*, p.712.

¹²³ See M. Todd Henderson, “Credit Derivatives Are Not ‘insurance’”, *Chicago John M.Olin Law & Economics Working Paper No. 476*, p. 14.

protected by law, the speculative cost would be greatly increased. As the “actual delivery” is the core criteria in relation to judge whether a derivatives contract is a “difference contract” or not, the speculators, who want legal protection, were forced to go to the spot market, buy the underlying goods, deposit them in the warehouse, and deliver them to the counterparties ultimately. Hence, as the speculative cost had been increased, excessive speculation activities were impeded.

However, even with the doctrine of “difference contracts”, the ambition of speculation on commodities had not been wiped out. In order to solve the problem of lack of certainty of their OTC speculative derivatives trading, a bunch of private-owned futures exchanges emerged in the late of the nineteenth century in the United States.¹²⁴ Most of these future exchanges still existed today and some of them have developed to be the most influential derivatives exchanges globally, such like the Chicago Mercantile Exchange (CME) and the Chicago Board of Trade (CBOT).¹²⁵ Through well-designed mechanism, these private exchanges could basically assure the implementation of all the future contracts, both for hedging or speculation purpose. In essence, the future exchanges brought the speculative commodity derivatives into the exchange that would be in the regulatory oversight of authorities. Besides, in order to enjoy the benefit exchanges provide, the main traders in the OTC derivatives market shall become “trading members” of the exchange, which shall timely post margins, i.e. collaterals, to the exchange on the basis of their risk exposure in derivatives trading. And usually the members of the exchange shall put a sum of money to the default fund of the exchange to guarantee possible defaults of the members of the exchange. The futures traders that are not members of the future exchanges could also purchase and sell future contracts on the exchange, yet, they need to establish appropriate trading arrangement with the trading members of the

¹²⁴ Jonathan Ira Levy, “Contemplating Delivery: Futures Trading and the Problem of the Commodity Exchange in the United States 1875- 1905,” 3 *Am. Hist. Rev.* 307, 2006, p.314, (It is also argued that in the late 1800s saw enormous growth in both futures exchanges and the derivative products traded on them, by the end of 19th century, speculators could trade futures not only on the price of wheat and corn, but also on those of horses, mules, sheep, swine, lard, beef, hops, rye, cheese, coffee, oil, gas, petroleum, and a host of other commodities.)

¹²⁵ See Lynn A. Stout, *supra* 117, “Derivatives and the Legal Origin of the 2008 Credit Crisis,” p.17

exchanges. So commission fees shall be paid to the trading members, and relevant margins shall be posted through the trading members. Therefore, the derivatives trading on the exchange would also increase some cost for speculators. Moreover, the future contracts traded on the exchange are standardized, thus they would be less attractive and convenient for some speculators. For example, one predicts the wheat price will rise in 9 months, but in the exchange, there are only future contracts related to wheat for 6 months or a year, so speculators would find less convenient.¹²⁶ In short, speculative transactions on commodity derivatives are also, to some extent, impeded, though the emergence of futures exchanges.

It is therefore that, due to the common law doctrine of “difference contract,” most derivatives trading were confined in futures exchanges. And thereby speculative transactions were controlled within a reasonable level, which did not undermine the stability of the economy.

2. Codifying the common law doctrine of “difference contracts” into statutory law

The common law doctrine of “difference contracts” successfully drove speculative commodity transactions in the future exchanges, complains about these exchanges appeared. However, the farmers, small business entrepreneurs, and others who often deal with physical commodities complained that commodities prices were often manipulated by these future traders.¹²⁷ In response, the U.S. government took a first step in regulating the commodities future exchanges. In 1922, the U.S. Congress enacted the Grain Futures Act (GFA), which then was amended into the well-known Commodity Exchange Act (CEA) of 1936.¹²⁸

In the CEA 1936, the common law principle of “difference contracts” was

¹²⁶ See Mehraj Mattoo, “Structured Derivatives: New Tools for Investment Management a Handbook of Structuring, Pricing & Investor Applications,” Financial Times Press, 1997, pp.13-14.

¹²⁷ Lynn Stout, *supra* 117, “Derivatives and the Legal Origin of the 2008 Credit Crisis,” p. 17.

¹²⁸ See *Ibid*, p.17; see also 7 U.S.C. §1-27f (2011).

codified as a mandatory rule.¹²⁹ It plays a central role in CEA, despite of some small changes. In general, the CEA took a more alert view towards speculative derivatives transactions. Firstly the CEA prohibited off-exchange commodities trading,¹³⁰ with the exemption of real delivery ones.¹³¹ Secondly, it provided that the off-exchange speculative transactions are not just unenforceable but also illegal crimes.¹³² Moreover, it is strictly provided that only derivatives trading with real delivery could be seen as legal trading, which means that the counterparties wanted to hedge pre-existed risks related to the underlying goods but without intention of delivery are also prohibited. Hence, on the one hand, the ambit of commodities trading was limited; and on the other, speculators trading commodities outside the regulated exchange will violate criminal law. Compared to the original common law doctrine of “difference contracts”, the CEA 1936 was less flexible and might too heavy-handed.

With the development of the derivatives market, the regulatory ambit of CEA was enlarged several times. In 1974 amendment to CEA, its applicable scope has been extended to futures trading in all other goods and articles, not just agriculture commodities, like cotton and so on.¹³³ In fact, there is not a strict definition of commodities in CEA. Its ambit is open to lately developed derivatives that traded on exchanges. So, in the U.S., CEA could also regulate the financial derivatives traded on the exchanges.¹³⁴ It is mentionable that in the same year of 1974, the federal regulatory agency of the United States was established by the Commodity Futures

¹²⁹ As originally enacted, section 5 of the CEA provided that excessive speculation in any commodity under contracts of sale ... for future delivery ... is an undue and unnecessary burden on interstate commerce. ” see Commodity Exchange Act, Pub. L. No. 74-675 section 5, 49 stat. 1491, 1492 (1936).

¹³⁰ See 7 U.S.C., Section 6(a) (1) (1994).

¹³¹ See 7 U.S.C. Section 2 (1994); see also William L. Stein, “The Exchange-trading Requirement of The Commodity Exchange Act,” 41 Vand. L. Rev. 473, 1988, (discussing exemption for contracts intended to be settled by delivery).

¹³² See e.g. 7 U.S.C section 13 (1994) (establishing criminal penalties for off-exchange trading in contracts not settled by delivery); *CFTC V. Nobel Metals int’l. Inc*, 67 f.3d 766, 772 (9th Cir. 1995), (holding “forward delivery program contracts” to be illegal off-exchange futures where traders’ customers did not expect to take actual delivery.)

¹³³ See Lynn Stout, “Why the Law Hates Speculators,” 48 *Duke Law Journal* 701, 1999, pp.721-22.

¹³⁴ The U.S. legislators have also noticed that the term commodity could not include other types of derivatives, especially the financial derivatives including CDSs, but they did not choose to change the title of CEA. See this description, Edward R. Morrison & Joerg Riegel, “Financial contracts and the New bankruptcy code: insulating markets from bankrupt debtors and bankruptcy judges,” Columbia Law School the Center for Law and Economic Studies Working Paper No. 291, 2006.

Trading Commission (CFTC) Act. CFTC was attributed the full jurisdiction over the commodity market, with its main mandate of supervising the commodities exchanges.¹³⁵ After the establishment, CFTC began devoted itself in inhibiting undue speculative commodity transactions.¹³⁶

For short, in codifying the common law doctrine of “difference contracts” into CEA, speculation on derivatives was strictly regulated. However, this vigilant legal approach toward speculative derivatives began to be changed since from the 1980s. And finally the U.S. law in relation to regulating the derivatives trading went into the other extreme.

3. The abrogation of CEA and the common law doctrine of “difference contracts”

After the breakdown of the Breton Wood system, the global financial market became very volatile. In order to hedging potential risk in relation to financial assets, the OTC financial derivatives market rapidly thrived, especially as for the market of interest rate swaps and the foreign currency exchange swaps. Essentially, these swaps contracts replicated the function of future contracts so as to hedge the future interest and foreign currency exchange risk in international trading.¹³⁷ As products of

¹³⁵ Detail of the history of CFTC, please refer to the official web of CFTC, available at <<http://www.cftc.gov/About/HistoryoftheCFTC/index.htm>> (last visited on 4 November 2014)

¹³⁶ In this regard, CFTC, firstly, has the power to examine the economic purpose of every new type of futures or options an exchange seeks to offer. The exchange must demonstrate to CFTC that the new futures or options would not serve merely to speculation but benefit the “public interest”, i.e. serve to hedging risk purpose. Secondly, within the exchanges, the CFTC also could impose other restrictions to deter excessive speculative transactions. For example, the CFTC can seek to discourage speculative trading on certain products by imposing “position limits” that restrict the size of the position an individual trader can take in any particular contract, as well as “trading limits” that restrict the size of particular transactions. Furthermore, a number of other rules also discourage speculation in futures. For example, a customer who opens a futures trading account must sign a disclosure statement acknowledging that he understands the risks involved; he must also characterize the account either as a “hedge” account or a “speculative” account. The latter are scrutinized by CFTC more carefully. See William L. Stein, “The Exchange-trading Requirement of the Commodity Exchange Act,” 41 Vand. L. Rew. 473, 1988, p.482; Darrell Duffie, “Futures Market,” Prentice Hall College Press, 1989, pp.67-70. Also see 7 U.S.C. § 6a(a) (c) (1994).

¹³⁷ See Raffaele Scalcione, “The Derivatives Revolution: A Trapped Innovation and a Blueprint for Regulatory Reform,” Wolters Kluwer, 2011, p.167 (Noting that “during the 1980s, a large market of derivatives evolved developing a growing number of OTC bilateral contracts that substantially replicated the same economic functions of certain futures, or swaps.”)

financial innovation, in their early stage, the financial industry did not realize the swaps might also be regulated by the CFTC, according to the statute of CEA,¹³⁸ though the regulatory scope of CEA has been extended to all goods and articles in the 1974 amendment. And in fact, the CFTC did not intend to regulate the OTC financial derivatives market since the 1970s. Therefore, the derivatives industry did not worried about the potential regulation under CEA, which would make the OTC speculative financial swaps void and illegal.

However, this situation changed since 1987. In that year, the CFTC posed an “advance notice”, firstly trying to regulate the swaps market. In its statement CFTC claimed that “swaps and other complex hybrid derivatives, from the sense of economic structure, have the same function with on-exchange traded futures, thus the CFTC has the jurisdiction over these innovative products.”¹³⁹ This “advance notice” was then hastily criticized by the derivatives industry and incurred significant oppositions. The derivatives industry association International - Swaps and Derivatives Association (ISDA) - began its lobby campaign.¹⁴⁰ The CFTC then issued a “swaps exemption” in 1989, declaring that “although it believed that the CEA gave it authority to regulate swaps, it would not do so as long as they would differ from future contracts.”¹⁴¹ In spite of the exemption, the CFTC, at the same time, proclaimed its regulatory right over this market.

In order to prevent potential regulatory threat, the industry further lobbied to the U.S. Congress, requesting the latter to amend the CEA with the excuse of protecting the prosperity of this important market. In 1992, the Congress passed the Future Trading Practices Act (FTPA), which empowered the CFTC to exempt any class of

¹³⁸ See, Lynn Stout, *supra* 117, “Derivatives and the Legal Origin of the 2008 Credit Crisis,” p.19.

¹³⁹ See Raffaele Scalcione, *supra* 139, “The Derivatives Revolution: A Trapped Innovation and a Blueprint for Regulatory Reform,” 2011, p. 168. (In 1987, the CFTC’s turf battle to expand its jurisdiction over OTC derivatives and hybrids culminated in 1987 in a rule-making “advance notice” in which the CFTC asserted its jurisdiction over hybrids on theory that the payment feature of certain hybrids did resemble the payment structures of regulated futures, thereby possessing the same economic functions.)

¹⁴⁰ *Ibid.* p.168.

¹⁴¹ At that time the CFTC was headed by the conservative economist Wendy Gramm who later joined the director board of Enron. See *Ibid.*, p.168.

OTC derivatives from the scope of CEA.¹⁴² In 1993, the CFTC promptly used its new authority to preclude OTC traded swaps off the regulation of CEA.

After that, OTC financial derivatives market continued to burgeon. But meanwhile, a series of disasters occurred in the financial market with concern to the OTC derivatives trading. In 1994, Proctor & Gamble announced that it had suffered a 157 million dollars loss due to speculation on interest rate swaps.¹⁴³ Only a few months afterwards, the Orange County's pension fund filed for bankruptcy protection, the failure of which was also due to the huge losses in OTC derivatives transactions.¹⁴⁴ Alarmed by these disasters, in 1998, the new Chairman of CFTC Brooksley Born, prepared to regulate this opaque and unregulated market.¹⁴⁵ Then, in the summer of that year, CFTC issued a "Concept Release," in which it indicated that it was considering the possibility of introducing a regulatory framework as for the OTC derivatives market.¹⁴⁶ Brooksley Born's effort to regulate the OTC derivatives market incurred strong opposition from the industry, and furthermore, the CFTC's position was boycotted by other main U.S. federal financial market regulators, namely the Federal Reserve, the Treasury and the SEC. In order to suppress the quarrel between the regulatory agencies, the U.S. Congress immediately enacted a legislation to limit the CFTC's rulemaking authority in relation to the OTC derivatives market.¹⁴⁷

Afterwards, requested by the U.S. Congress, the Chairmen of the Senate and House Agriculture Committees, a "President Working Group" was established, with its mandate of re-designing legislative approaches regarding OTC derivatives. The group consisted of the Federal Reserve Chairman Greenspan, Treasury Secretary Robert Rubin, and the Undersecretary of the Treasury Lawrence Summers, all of who

¹⁴² See R. Scalcione, *supra* 139, "The Derivatives Revolution: A Trapped Innovation and a Blueprint for Regulatory Reform," p.168. (in this act, the federal law also preempted any state laws that made OTC derivatives unenforceable due to the state anti-wagering and anti-bucket shop laws)

¹⁴³ See, Lynn Stout, "Betting the Bank: How Derivatives Trading under Conditions of Uncertainty Can Increase Risks and Erode Returns in Financial Markets," *Journal of Corporate Law*, fall 1995, p. 53.

¹⁴⁴ *Ibid*, p.53.

¹⁴⁵ See Lynn Stout, *supra*117, "Derivatives and the Legal Origin of the 2008 Credit Crisis," 2011, p.20

¹⁴⁶ Just a few weeks after the release, the famous investment firm, the Long Term Capital Management (LTCM), failed into crisis also due to the OTC derivatives trading. If without the governmental bailed out, it would have been bankrupted. See R. Scalcione, *supra* 139, p.168.

¹⁴⁷ After this legislation, the Chairman Born was forced to resign from her position.

were strongly opposed to the CFTC's regulatory effort.¹⁴⁸ In 1999, the group published a very influential report, i.e. "Over-the-Counter Derivatives and the Commodity Exchange Act." In this report, it was highlighted that "a cloud of legal uncertainty has hung over the OTC derivatives markets in the United States in recent years, which, if not addressed, could discourage innovation and growth of these important markets and damage US's leadership in these arenas by driving transactions off-shore."¹⁴⁹ Thus, the keynote of future legal approach as for the OTC derivatives market has been laid down. Promoting financial innovation and maintaining the U.S. competition in the financial market prevailed than the concern of potential risk that could be brought by the unregulated OTC derivatives market.¹⁵⁰

Following the reform blueprint settled down by the President Working Group's report, in 2000, the U.S. Congress promulgated the notorious Commodity Futures Modernization Act (CFMA 2000). It is a victory of the financial derivatives industry.¹⁵¹ The enactment of CFMA attributed legal certainty of OTC financial derivatives trading, in particular for those speculative transactions. Firstly, CFMA excluded most of financial derivatives from the regulatory scope of CEA. The exempted transactions included most of the derivatives, ranging from the underlying assets of interest rates, exchange rates, currencies, securities, indices, credit risk, other indices based on commodities with no cash market, prices, or levels that are not in the control of either party of the transaction.¹⁵² In short, most of the OTC financial

¹⁴⁸ See Report of the President's Working Group on Financial Markets (PWG Report hereinafter): "Over-the-Counter Derivatives Markets and the Commodity Exchange Act," November 1999.

¹⁴⁹ Ibid.

¹⁵⁰ Fairly speaking, the President Working Group has also noticed the systemic risk that the opaque OTC derivatives could generate. The working group concluded that it is important to remove legal impediments to the development of electronic trading systems, which have the potential to increase market liquidity and transparency, and appropriately regulated clearing systems, which can reduce systemic risk by allowing for the metallization of risks among market participants and by facilitating offset and netting of contractual obligations."), see Ibid, p.2.

¹⁵¹ Lynn Stout, *supra* 117, 2011, (stated that "when CFTC intended to regulate the OTC derivatives market, the industry quickly responded to the threat. In the (lobby) process, it proved itself far more politically powerful than the small, stodgy, and badly out-lobbied CFTC. Representatives from the derivatives industry besieged Congress with appeals to stop any federal regulatory effort.") It is also the victory of the self-regulation theory towards the regulation of this market, which reflects the prevailing of the neo-liberalism in the economics since the 1980s.

¹⁵² See CFMA 2000, SECTION 103, 120 (codified at 7 U.S.C section 2 (h), 25 (a)(4) (2001)). Apart from the "excluded financial derivatives", the CFMA also exempted most of non-agricultural

derivatives contracts were essentially considered legally valid.¹⁵³ Second, CFMA introduced an amendment section (2A) to the U.S. 1933 Securities Act, providing that no security based swaps will constitute a security under the Securities Act.¹⁵⁴ According to this provision, the derivatives based on securities, for instance CDS with reference debt of mortgage-backed securities, will not be considered as unregistered securities under the US securities regulation.¹⁵⁵ It is therefore that, the OTC financial derivatives, including CDSs, were totally exempted from any substantial regulations. Both the CFTC and the SEC could not intervene into this market any more. Moreover, since the legislation of CFMA, power at the state level in relation to regulating this market has also been preempted.

Hence, the CEA provisions regarding speculative OTC derivatives, along with the traditional common law doctrine of “difference contracts” that had been codified into the CEA, were abruptly repealed by the CFMA. After that, speculative OTC derivatives, especially swaps transactions, became legally protected. The panic caused by derivatives speculation before 2000 was temporally forgot by the public. It could be predictable that speculative financial derivatives trading would thrive, since the legal barrier has been removed.

4. CFMA caused excessive speculation on CDSs contracts

According to data of the Bank for International Settlements (BIS), at the end of 1999, just prior to the CFMA’s passage, the total outstanding notional value¹⁵⁶ of OTC

commodities, like energy derivatives from the application of CFMA, so long as they were traded between Eligible contract participants.” See also, R. Scalcione, *supra* 139, p.170.

¹⁵³ But it is mentionable that the CEA provisions of anti-fraud and anti-manipulation still apply under the CFMA.

¹⁵⁴ See *Ibid*, p.170.

¹⁵⁵ The SEC was expressly prohibited from registering, requiring registration, recommending, or suggesting registration from any security based swaps. Although excluded from the rules regarding the registration of securities, the exclusion specifically provided that even if the qualifying swap agreements are not securities, thereby outside the scope of the securities regulation, they are nevertheless subject to antifraud and anti-manipulation provisions as well as insider trading prohibitions of the Securities and Exchange Acts.

¹⁵⁶ Derivatives are usually measured according to their notional value, meaning the value of the underlying financial asset on which a derivatives contract is written. For example, the notional value of a CDS on a bond with a \$1 million face value is \$1 million.

derivatives – mostly consist of interest rate swaps and other financial derivatives already exempted from the CEA – was approximately 88 trillion dollars, however the volume of the OTC derivatives market grew to more than 670 trillion dollars before 2008.¹⁵⁷ In terms of CDS market, the aggregate worldwide notional outstanding value grew from 6.4 trillion dollars in 2004 to near 59 trillion dollars at the end of 2007.¹⁵⁸

The CDSs market increased from nil to such a huge market in less than 10 years. Although they played an important role in risk transferring for the banking sector, we believe that the strongest impetus for this growth could be attributed to speculative transactions. We could prove this from several evidences.

First and foremost, it is manifested by the U.S. Financial Crisis Inquiry Report that most of the outstanding CDSs before the 2008 crisis were written on mortgage backed securities and a small number of corporate bonds.¹⁵⁹ However, compared to the 59 trillion dollars market of CDSs, in 2008 the aggregate notional value of most of the underlying assets, i.e. the mortgage backed securities and corporate bonds, amounted only to \$ 15 trillion.¹⁶⁰ And, it is reported that, in 2007, the total outstanding value of the American subprime mortgages was just 1.3 trillion dollars.¹⁶¹ Furthermore, as the CDSs on corporate debts were focused on a small number of top giant corporations, such as GE.¹⁶² Therefore, it is reasonable that the scale of CDS market is at least four times bigger than the market of all the underlying assets. In other words, more than 3/4 of the CDSs trading were not with the intention of hedging existed risk of these financial institutions, but speculation. The FCIC's report also

¹⁵⁷ Bank for International Settlements (BIS), "Semiannual OTC Derivatives Statistics at End-June 2010, table 19," available at <<http://www.bis.org/statistics/derstats.htm>> (Last visited on 4 November 2014); See also The Financial Crisis Inquiry Report (FCIC Report), supra 69, p.48, (stating that "the gross present market value of OTC derivatives outstanding grew from \$ 3.2 trillion in 2000 to \$ 20.3 trillion in 2008, while notional value grew from \$ 95 trillion to \$ 672 trillion in the same period.")

¹⁵⁸ Ibid FCIC report, p.50.

¹⁵⁹ For example, AIG's Financial Products subsidiary had written \$ 79 billion in over-the-counter CDS protection on super-senior tranches of multi-sector CDOs backed mostly by subprime mortgages. See Ibid FCIC report, p.243.

¹⁶⁰ Lynn Stout, "Regulate OTC Derivatives by Deregulating Them," Banking & Financing, Fall 2009, p. 33.

¹⁶¹ NBC news, Will the Subprime Mess ripple through the Economy? Mar. 13, 2007, available at <http://www.nbcnews.com/ibid/17584725/ns/business-real_estate/t/will-subprime-mess-ripple-through-economy/#.VE4cgGc54Ww> (Last visited on 4 November 2014).

¹⁶² See Lynn Stout, supra 162, 2009, p.33.

confirmed this conclusion, which claimed that “in many cases, where banks had made derivatives bets on mortgage backed bonds in amounts many times larger than the value of the bonds themselves.”¹⁶³ It is observable that, after 2004 the CDSs market developed faster than before. This partially due to that CDS market became more standard and liquid after the advent of index CDS and synthetic CDOs. In other words, the cost of speculation has been greatly declined, which could further promote the speculations.¹⁶⁴

Secondly, from the composition of the market participants, it could also be deduced that speculative transactions prevailed in this market. Before the passage of CFMA 2000, the CDS market was small, and the main transactions were executed by commercial banks for transferring existed credit risk. However, the market participants became more and more diversified after the CFMA. Hedge funds, other types of investment funds and investment firms turned to be the most active players in this market. And the market share of these investment funds was continually rising, while the market share of commercial banks shrank before the crisis. The 2008 IMF report showed that between 2004 and 2006, the CDSs market share of hedge funds increased from 16% to 28% as protection buyers, while this data of banks declined from 67% to 59%. Similarly, the CDSs market share of hedge funds increased from 15% to 31% as protection sellers, while banks declined from 54% to 43% in this regard.¹⁶⁵ While the basic business model of these investment funds is speculating,¹⁶⁶ this could give us another important proof to claim that the CDSs market was becoming dominated by speculative transactions.

Speculation is a double-edge sword. On the one hand, it could raise the liquidity

¹⁶³ FCIC report, supra 69, p. 145.

¹⁶⁴ The index CDSs market is akin to the on-exchange stock market, as the buying and novation of index CDSs contract has become much easier and faster, though legally speaking, they are still contracts, and unregulated by law as stocks.

¹⁶⁵ See IMF report, “Global Financial Stability Report: Containing Systemic Risk and Restoring Financial Soundness,” April 2008, (Showing a sharp increase in participation by hedge funds in the CDS market relative to banks between 2004 and 2006, hedge funds increased from 16% of protection buyers to 28%, while banks declined from 67% to 59%. Similarly, hedge funds increased from 15% of protection sellers to 31%, while banks declined from 54% to 43%.)

¹⁶⁶ See Lynn Stout, supra 117, 2011, p.25.

of the OTC derivatives market, and thus lower the hedging cost of risks. However on the other hand, not prudently regulated speculation transactions could destroy the financial system. When excessive speculation led to the systemic important financial institutions fell down, the whole credit system fell into stagnant. Meanwhile excessive speculation on CDSs also gave the market a misleading signal that the subprime mortgage market was healthy. Therefore, it was made easier to sell those subprime mortgage backed securities, which indirectly promoted the brewing of the housing bubble in the United States.¹⁶⁷

5. Conclusion

In this chapter, we elaborated the common law approach towards speculative commodity derivatives and the codification of this doctrine into the U.S. Commodity Exchanges Act of 1936. The doctrine of “difference contracts” developed by the American Judges make the speculations on commodities void, namely the speculations would not get protection from the courts. So, speculative activities were greatly impeded. And under the CEA, this doctrine was further strengthened, speculations were considered not just void but also crimes. Hence, speculative derivatives transactions were appropriately restricted within a reasonable level. In 2000, the notorious CFMA was enacted, and the traditional common law doctrine of “difference contracts” was totally erosion along with the abrogation of the CEA.¹⁶⁸

¹⁶⁷ We believe that excessive speculative CDSs on the sovereign debt also exacerbated the European Sovereign debt crisis. Although we did not discuss in detail on this topic, it could be referred here that speculative CDSs trading written on the sovereign debt directly drove the rate of return of the debt issued by the southern European countries go higher, thus it became more difficult for those countries to get finance from the debt market. Moreover, the financial institutions that loaned to these countries also bet that these counties would default, because they have bought more than the notional value of the granted loan, thus they could also make money if these countries defaulted. It is therefore, the main creditors of these countries would not intend to make compromise on the issue of debt repayment, which exacerbated the deadlock of these countries.

¹⁶⁸ In fact, the abrogation of the common law rule of “difference contract” also happened in the UK. In 1986 the UK has made all financial derivatives, whether used for hedging or purely speculation, legally enforceable. And, nowadays, most of the main civil law jurisdictions for derivatives trading have also exempted speculative OTC derivatives from traditional “game law” rule, including Germany, France and so on. In a world of “run-to-the-bottom” in financial market regulation, the restoration of the traditional approach of prohibiting purely speculative derivative transactions has become nearly impossible. Therefore, another way to confine speculative derivatives in a reasonable ambit will be

Our argument is that the CFMA provided a legal prerequisite for the developing of speculative OTC derivatives, including CDSs, transactions. Namely, the CFMA removed the legal barrier for speculation on CDSs. We also observed and reasoned that, in practice, OTC derivatives, in particular, the CDSs market really have undergone a rapid growth and dominated by the speculative transactions. It shall be stressed that, for sure, the economic motion is the fundamental reason for the market thrive. Nevertheless, the erosion of the common law doctrine of “difference contracts” consist of the fundamental institutional reason for the excessive speculative CDSs transactions.

Chapter 4 The Erosion of the Bankruptcy Law

“Pro-Debtor” Principle

Apart from the CFMA 2000, which opened the gate for speculative OTC derivatives transactions, we also thoroughly investigated other laws in relation to the trading of OTC derivatives. It is astonishing that OTC derivatives, including CDSs, not just could be legally traded, but the trading of which could get a priority status than normal financial transactions, such as loans. In this regards, we have observed that the trading of OTC derivatives have eroded one of the fundamental doctrine in modern bankruptcy law, i.e the principle of “pro-debtor.” It is the fact that, before the 2008 crisis, bankruptcy law of the United States was amended several times for favoring the transactions of the financial innovation products: including swaps, securities, and repurchase contracts and so on. As a result, a “safe harbor” in bankruptcy law has been constructed for these financial transactions, which means that the traders of these financial products would be exempted from certain obligations in the bankruptcy law, and thus these transactions are more protected than normal transactions. We believe that the “safe harbor” in bankruptcy law for OTC derivatives trading facilitated the speculative derivatives transactions before the crisis, as a legal-friendly trading environment has been established.

Moreover, the safe harbor for OTC derivatives and the erosion of the pro-debtor principle directly pushed down the CDSs protection sellers, like AIG and some monoline insurance companies.¹⁶⁹ When the systemic important institution AIG failed, the 2008 crisis suddenly upgraded. Therefore, we are going to argue in this chapter that the erosion of the pro-debtor principle in bankruptcy law is one of the important underlying reasons for the escalation of the 2008 financial crisis. In doing

¹⁶⁹ The sellers of CDS protection were mainly insurance companies. The reasons is that the CDS protection buyer faced the risk that the CDS seller could not have the capability to pay the compensation if credit event happens, thus, they tended to buy CDS protections from insurance companies that have a stronger ground of capital reserve.

so, we will firstly elaborate the bankruptcy law principle of “pro-debtor,” and the main legal rules of this principle. Thereafter, we will look into how this principle was gradually eroded by OTC derivatives in the U.S. At last, we will reason the relationship between the erosion of this principle and the fall of AIG.

1. The pro-debtor bankruptcy law principle and its main rules

Bankruptcy law, as a sub-division of commercial law originated from the medieval commerce practice, inherited the very basic spirit of strengthening the protection to creditors, so as to promote the circulation of goods and credits.¹⁷⁰ Under this doctrine, bankruptcy law rules were cruel and even inhuman to the insolvent debtors in medieval ages. The debtors that intended to file for bankruptcy protection, discharging themselves from burdensome obligations, shall implement incredible requirements. For example, historians affirmed that in medieval Italy and France, bankruptcy petition applicants shall be nude in a designated spot, usually at the center of the city, and would be whipped against a stone as a necessary pre-condition of entering into bankruptcy protection procedure. Even worse, in England and German bankruptcy applicants shall endure cruel physical punishments, such like being cut an ear.¹⁷¹ Therefore, generally, we could conclude that the bankruptcy was not accepted by the law and the society under the name of inhibiting unfaithful behaviors of the debtors.

Protecting the interest of the creditors might be the utmost principle when the commerce was developing at its early stage. But unreasonable limitation for the application of bankruptcy might go into another extreme, especially when the society needs more entrepreneurs with spirit of adventure, and the society shall tolerate their failure and give them legal remedy to get rid of burdensome debts. In fact, bankruptcy

¹⁷⁰ Commercial law originated from the “commerce custom” in the medieval age. As a special law as to the common civil law (“ius civile”), the most distinguishing feature is the strengthened protection towards creditors. Cf. G. F. Campobasso, *Diritto Commerciale vol. 1 Diritto dell’impresa*, 6th edition, UTET, 2010, pp. 5-6.

¹⁷¹ In that period, bankruptcy per se was seen as a sin by the law, and this idea was entrenched in the whole society, which was influenced by the religion conceptions.

law began to take more responsibility on promoting economic development when such need of entrepreneurship became more urgent after 19th century, especially in the new land of America.¹⁷² Hence, the attitude of bankruptcy law towards insolvent debtors had been gradually reversed. Nowadays, bankruptcy is more seen as a natural or probabilistic event in business and economic activities. Discriminative rules against the debtors have been removed from the bankruptcy law. To be more exact, the modern bankruptcy law has become more debtor-friendly, especially for those insolvent debtors with bona fide. Several main bankruptcy law rules aim at promoting the rehabilitation of these insolvent debtors so as to maximize the social-economic influence. Actually, the pro-debtor principle could be justified by several economic theories. First of all, it is argued by some scholars that the assets of the bankruptcy debtor are usually ‘firm-specific’ or ‘sector-specific’, for instance the machinery and other equipment. This means that other people or the market probably would less appreciate the value of these assets than the insolvent debtors themselves. In view of maximizing the efficiency of resource, it would be better solution if we leave the assets to the insolvent debtors and promote their rehabilitation. Moreover, if the insolvent debtors could really survive, many job opportunities could be maintained. This result would be definitely welcomed by the policy makers, as the whole society will be better off.

In order to achieve the goal of rehabilitating insolvent debtors, a number of pro-debtor rules have been designed and written into the bankruptcy law, among which the most important ones include the rule of “automatic stay”, “cherry picking” and “preferential and fraudulent transfer.”¹⁷³ In the following, we are going to

¹⁷² This “pro-debtor” attitude change was firstly happened in the United States of America in the 19th century. At that time, the North America was relatively poor and less developed compared with the Europe. Yet, the advantage of the America is that there was less constraints from the traditional societal conception and the religion. The U.S. government realized that protecting debtors which temporarily fell into financial distress could greatly promote the entrepreneurship, which is good for stimulating the development of economy. Under this idea, the U.S. advanced a policy of reviving debtors, which is called “revival policy,” and more and more pro-debtor rules were written into its bankruptcy law, such as the procedure of debt rehabilitation. Until today, the bankruptcy law in the United States is more debtor friendly than its European cousin UK.

¹⁷³ However, it is worthy to make clear that these provisions also have the function of solving the “collective problem” of the creditors, namely promoting a more equal distribution of the debtor’s assets

elaborate these rules in America's Bankruptcy Code. Nevertheless, these rules have been also written into many countries' bankruptcy laws.

1.1 “Automatic stay”

“Automatic stay” means that upon the bankruptcy filing of the debtor, any activity related with the debtor's assets, such as credit right claims, execution of executory contracts, payments, collateral delivery etc., shall be automatically stopped. In the 2005 Bankruptcy Code of the United States, the activities that shall be immediately stopped are specifically itemized in section 362 (a).¹⁷⁴

In general, the provisions in section 362 (a) could prohibit any potential transfer of debtor's assets after the bankruptcy petition. Actually, once the bankruptcy petition has been filed, the debtor's assets will be immediately “crystalized” into “bankruptcy estate,” which will be managed by the “bankruptcy administrator” (also called “bankruptcy trustee” in the U.S. bankruptcy law). By virtue of this rule, the debtor's assets will be shielded against a “creditor grab-race” at the moment of bankruptcy. In other words, the “automatic stay” avoids dismemberment of an insolvent firm, which will greatly harm the firm's rehabilitation capabilities. Then, the insolvent debtors and creditors could negotiate for new repayment terms, and under which the firm could be preserved with going concern value.¹⁷⁵ As vividly explained in the legislation

amongst sophisticated and mediocre creditors, should the bankruptcy debtor finally entered into the liquidation procedure.

¹⁷⁴ See U.S.C 11 Section 362 (a), (“a petition...operates as a stay, applicable to all entities of (1) the commencement of continuation... of a judicial, administrative, or other action or proceeding against the debtor that was or could have been commenced before the case, or to recover a claim against the debtor that arose before the case; (2) the enforcement... of a judgment obtained before the case; (3) any act to obtain possession of property of the estate or of property from the estate or to exercise control over property of the estate; (4) any act to create, perfect, or enforce any lien against property of the estate; (5) any act to create, perfect, or enforce against property to the debtor any lien to the extent that such lien secures a claim that arose before the commencement of the case under this title; (6) any act to collect, assess, or recover a claim against the debtor that arose before the commencement of the case under this title; (7) the set-off of any debt owing to the debtor that arose before the commencement of the case under this title against any claim against the debtor; and (8) the commencement or continuation of a proceeding before the US tax court concerning a tax liability of a debtor that is a corporation of a taxable period the bankruptcy court may determine or concerning the tax liability or a debtor who is an individual for a taxable period ending before the date of the order for relief under this title.)

¹⁷⁵ See Franklin R. Edwards & Edwards R. Morrison, “Derivatives and the Bankruptcy Code: Why the

document of the U.S. bankruptcy law, the legislators claimed that, “the ‘automatic stay’ gives insolvent debtors a breathing spell from their creditors, stopping all collection efforts, all harassment, and all foreclosure actions.”¹⁷⁶ Therefore, the rule of “automatic stay” played a very important role in facilitating the rehabilitation of insolvent debtors.

In complementing this rule, the U.S. Bankruptcy code also provided an *ipso facto* clause, prohibiting bilateral agreement between the debtor and its counterparties that allow their counterparties to terminate the outstanding contracts when the debtors filed for bankruptcy. It was stipulated that any “ipso facto” agreement shall be considered nullified and void in section 365 (e) (1).¹⁷⁷ Besides, other contractual provisions, including the debt-acceleration clauses that would affect the integrity of the debtors’ assets in the event of financial distress shall also be void.¹⁷⁸

1.2 “Cherry-picking”

“Cherry-picking” is a jargon in bankruptcy law. The rule of “cherry picking” refers to that the bankruptcy administrator possess the power to assume the profitable executory contracts while reject the implementation of the non-profitable contracts.¹⁷⁹ Like the rule of “automatic stay,” “cherry picking” provision also aims at facilitating the revival of the insolvent debtors. But furthermore, this rule attributes the debtor more capability to survive, provides that the bankruptcy administrator could pick those “in-the-money” contracts to fulfill. Meanwhile, the counterparties of the debtor shall continue to fulfil the contracts or terminate the contracts according to the decision of the bankruptcy administrator.

As generally provided in the section 365 of the U.S. Bankruptcy Code that, “apart from some exemptions, the bankruptcy trustee, subject to the court’s approval, may

Special Treatment?” 22Yale Journal of Regulation 91, 2005, p.95.

¹⁷⁶ HR REP NO 95-595, AT 340 (1978), Reprinted in 1978 U.S.CCAN 5963, 6296-97; S. REP. NO 95-989, AT 54-55 (1978), Reprinted in 1978 U.S.CCAN 5787, 5840-41.

¹⁷⁷ U.S.C 11, section 365 (e) (1)

¹⁷⁸ Ibid.

¹⁷⁹ See also, Franklin R. Edwards & Edward R. Morrison, supra 177, 2005.

assume or reject any executory contract.”¹⁸⁰ More specifically, in a bankruptcy case under Chapter 11, namely the bankruptcy reorganization procedure, “the bankruptcy trustee may assume or reject an executory contract at any time before the confirmation of a plan, but the court, on the request of any party to such contract, may order the trustee to determine within a specified period of time whether to assume or reject such contract or lease.”¹⁸¹

1.3 “Preferential and fraudulent transfer”

The bankruptcy law rule of “Preferential transfer” has been developed mainly for impeding unequal repayment among creditors. Due to kinds of factors, such as information advantage, better creditor-debtor relationship and so on, more sophisticated creditors might aware the bankruptcy of the debtor before others. In order to prevent the potential risk,¹⁸² they may ask the repayment from the debtor earlier than the maturity date of the contract. However, the “preferential transfer” to more sophisticated creditors is unfair to other creditors, especially when the bankruptcy of the debtor happened soon after such preferential transfers.¹⁸³ Thus, the preferential transfer shall be inhibited.

In the U.S. 2005 Bankruptcy Code, section 548 provides that “ the bankruptcy trustee may avoid any transfer of an interest of the debtor in property if all of the following conditions are satisfied: (1) to or for the benefit of a creditor; (2) for or on account of an antecedent debt owed by the debtor before such transfer was made; (3) made while the debtor was insolvent; (4) made – (A) on or within 90 days before the date of the filing of the petition; or (B) between ninety days and one year before the date of the filing of the petition, is such creditor at the time of such transfer was an insider; and (5) that enables such creditor to receive more than such creditor would

¹⁸⁰ See U.S.C 11 section 365 (a)

¹⁸¹ U.S.C 11, Section 365 (d) (2).

¹⁸² Because if the repayment of the creditor’s right go into the bankruptcy procedure like other credit claims, the actual repayment could be retrieved might be much in the bankruptcy liquidation procedure.

¹⁸³ Some also pointed out that “the underlying purpose of this rule is also aimed to provide incentive to creditors to deal with troubled companies, rather than racing to the court to dismember them.”

receive if –the case were a case under chapter 7 of this title”.¹⁸⁴ In plain words, under the U.S. law, any asset transfer made 90 days before the bankruptcy filing, which let the transferee creditor receive more than he could receive in the bankruptcy liquidation process, shall be avoided by the bankruptcy administrator. And the assets transferred shall be called back into the pool of bankruptcy estate.

Moreover, if the debtor intentionally transferred its assets for insufficient value within 2 years before the bankruptcy to certain creditors, that transaction would be considered as “fraudulent transfer” in the bankruptcy law, which would be repealed. It is provided in section 548 of the U.S. bankruptcy code that “The trustee may avoid any transfer of an interest of the debtor in property, or any obligation incurred by the debtor, that was made or incurred on or within 2 years before the date of the filing of the petition, if the debtor voluntarily or involuntarily – (A) made such transfer or incurred such obligation with actual intent to hinder, delay, or defraud any entity to which the debtor was or became, on or after the date that such transfer was made or such obligation was incurred, indebted; or (B) (i) received less than a reasonably equivalent value in exchange for such transfer or obligation; and (ii) (I) was insolvent on the date that such transfer was made or such obligation was incurred, or became insolvent as a result of such transfer or obligation; (II) was engaged in business or a transaction, or was about to engage in business or a transaction, for which any property remaining with the debtor was an unreasonably small capital; (III) intended to incur, or believed that the debtor would incur, debts that would be beyond the debtor’s ability to pay as such debts matured; or (IV) made such transfer to or for the benefit of an insider, or incurred such obligation to or for the benefit of an insider, under an employment contract and not in the ordinary course of business.”¹⁸⁵ In short, any form of fraudulent transfers before the bankruptcy shall be subjected to a longer period of abrogation.

Obviously, the “preferential and fraudulent transfer” rules also played an

¹⁸⁴ 11 U.S.C, Section 548 (b)

¹⁸⁵ 11 U.S.C, Section 548 (a).

important role, apart from keeping fairness among creditors, in protecting the loss of the debtors' assets. This is quite important when considering the “agent-principal” problem in big companies. The managers of the company could transfer the firm's assets to particular creditors in exchange of personal benefit while damaging the firm and other creditors' benefit. Hence, it is useful providing the rule of “preferential and fraudulent transfer” in bankruptcy law so as to protect the integrity of the debtors' assets. Unfortunately, these rules we have elaborated above, were gradually restricted in the US bankruptcy law as to the application for OTC derivatives, and thereby the debtors that excessively involved into the OTC derivatives trading became more easily to be attacked when fall into financial distress.

2. Conflicts between the “pro-debtor” rules and the OTC derivatives practice

Like CFMA that deregulated speculative OTC derivatives, after 2000 the U.S. bankruptcy law was amended several times also for favoring OTC derivatives transactions. As we have just mentioned above, the main pro-debtor rules in the U.S. bankruptcy law were finally exempted especially in relation to OTC derivatives trading. Then, we would wonder why these pro-debtor rules shall be excluded from applying to OTC derivatives? And how did this happen? We will argue below that the practice of the OTC derivatives market, mainly embodied in the special trading rules of the ISDA documentation, is a fundamental factor that underpinned such bankruptcy law change. So, firstly we are going to scrutinize these special trading rules established by the self-regulation association of the OTC derivatives industry.

2.1 Special trading rules established by ISDA documentation

As the self-regulation organization of the OTC derivatives industry, ISDA, i.e. the International Swaps and Derivatives Association, was established by the main

derivatives dealers in 1985.¹⁸⁶ Since its birth, ISDA has played a very active role in lobbying the legislators (normally lobby the U.S. legislators at first and then the European legislators afterwards) to deregulate the OTC financial derivatives market.¹⁸⁷ Besides its lobby activities, the most important thing ISDA has done is established a set of common trading rules for the OTC derivatives industry. These rules are embodied in the several standardized ISDA documentations, which are provided to the trader to use freely.¹⁸⁸ Although, the contracting parties of a derivatives trading have the freedom to choose the usage of ISDA documentation, it is estimated that the ISDA documentation is probably used for 90 percent by volume of derivatives transactions in the marketplace.¹⁸⁹

Before the crisis, ISDA had developed several editions of the Master Agreement, namely the 1987, 1992, and 2002 ISDA documentation respectively.¹⁹⁰ The ISDA documentation consists of three documents, i.e. the “Master Agreement,” “Schedule,” and “Confirmation.” The Master Agreement sets forth standardized terms in relation to the general provisions of derivatives contracts, mainly including the terms of credit events, netting, early termination, alignment, currency, and others.¹⁹¹ If the parties need to modify part of the provisions in the Master Agreement for specific transactions, they could amend relevant terms through the “Schedule.” For instance, the types of credit events could be selected in the Schedule.¹⁹² But in order to finalize every single transaction under the Master Agreement, the contracting parties shall sign a “Confirmation,” in which the main terms, such like the reference entity, payment

¹⁸⁶ Detailed information about ISDA, please refer to ISDA’s official website, available at <<http://www2.isda.org/>> (last visited on 4 November).

¹⁸⁷ As an agent of industry interest, ISDA has manifested its competence, though neglecting the interest of the whole society and the safety of the economy most of the time.

¹⁸⁸ It is worth to appreciate that ISDA documentation promoted the efficiency of the OTC derivatives market. Namely, derivatives counterparties could save their contracting time and cost using the standardized terms of the ISDA documentation.

¹⁸⁹ Phillip Wood, “Law and Practice of International Finance,” Sweet & Maxwell, University Edition, 31 Oct 2007, p.507.

¹⁹⁰ The commonly used edition is the 1992 one, which is fully called “Multi-currency and Cross-border Master Agreement”. And the usage of 2002 Master Agreement is rising before the crisis, although the 1992 version still remains largely in use. See Vinod Kothari, *supra*, p.366.

¹⁹¹ See ISDA 2002 Master Agreement and ISDA 1992 Master Agreement.

¹⁹² *Ibid.*

structure, credit events, settlement provisions, of single derivatives trading contract shall be clearly reiterated.¹⁹³ The master agreement, the schedule and the confirmation formed the complete documentation for any single transaction between the contract parties.¹⁹⁴ In order to promote the trading efficiency and prevent any legal regulation, special rules have been formed in the ISDA documentation.

2.1.1 Single agreement system

The first legal effect of the ISDA master agreement is that all transactions entered into by the derivatives counterparties will constitute a single agreement. Both the 1992 and 2002 ISDA Master Agreement provided this rule. For example, Clause 1 (c) of the 2002 Master Agreements provides that “all transactions are entered into in reliance on the fact that this Master Agreement and all Confirmations form a single agreement between the parties ... and the parties would not otherwise enter into any transactions.”¹⁹⁵ To be more exact, CDS market participants would enter into CDSs contracts with each so many times, each with its one confirmation. However, if the counterparties have chosen to sign their contracts under the Master Agreement, all their single CDSs transaction will form a single agreement, thereby if credit event happens in one transaction, the default of all other transactions will also be triggered at the same time. It is argued that this practice is aimed at fighting with the bankruptcy-administers’ cherry-picking power, given that the trustee could not pick those in-the-money derivatives contracts, while repudiate other out-of-the-money contracts.

¹⁹³ There are several ways of signing a Confirmation, for example, a Confirmation for each transaction along with a schedule, or a master confirmation for all credit derivative transactions between the parties, or along with a transaction supplement for each transaction. See Vinod Kothari, *supra*, p.371.

¹⁹⁴ Although the Confirmation is a legal memo, it has legal priority in case of any inconsistency or conflicts amongst the three documents. In other words, if conflicts occur, the standard terms of the master agreement are overridden by the schedule of the master agreement, and for a particular contract, the Confirmation overrides both the master agreement and the schedule. See Vinod, *supra*, p.371. See also ISDA 2003 Credit Derivatives Definitions 1, Exhibit A (61-67), (like similar confirmations in other derivatives transactions, CDS Confirmations provide that: “this confirmation supplements, forms part of, and is subject to, the ISDA Master Agreement ... between you and us. All provisions contained in the agreement govern this confirmation except as expressly modified below.”)

¹⁹⁵ ISDA 2002 Master Agreement, section 1(c).

2.1.2 Close-out netting

Close-out netting is a fundamental rule under ISDA Master Agreement. It is provided by the ISDA Master Agreement that when one party to a transaction defaults the non-defaulting party can calculate a single settlement amount by offsetting its scheduled future payments and delivery obligations to the bankruptcy party against the bankruptcy party's obligations to it.¹⁹⁶ The benefit of netting is significant. To illustrate this, one can imagine two banks that have entered into dozens of CDSs with one another, each bank holding both long and short positions. One bank wishes to transfer all of its trades to another counterparty and the other bank agrees to the novation. Instead of reckoning the balance on each trade, paying piecemeal, the banks can calculate the net amount owing under all trades and settle the account in one net payment.¹⁹⁷ Namely, the "close-out netting" clause allows the non-default derivatives party avoid of entering into bankruptcy procedures with other creditor of the insolvent debtor.

Moreover, the ISDA documentation also provides cross-transaction netting, that is set-off between different types of transactions, for example the netting of credit derivatives and interest rate derivatives that are under two master agreements. Usually, the Schedule would provide the trading parties the right to choose cross-netting among different types of OTC derivatives.

2.1.3 Margins-exchange

Apart from netting, collateralization is the most important private tool of managing counterparty risk in the derivatives market. Collateral provides the in-the-money party with the funds that would allow it to replace the terminated derivatives transactions if its counterparty were to default.¹⁹⁸ Under the ISDA Master Agreement, ISDA

¹⁹⁶ See, Flanagan, p.230-31

¹⁹⁷ R. Schwarz, supra, p. 196.

¹⁹⁸ ECB, supra 69, 2009, p.44, (It is important to note that this collateral is available even if the in-the-money party is the defaulting entity. This practice is potentially more important for the

provided standardized collateralization document, i.e. Credit Support Annex (CSA),¹⁹⁹ annexed to the master agreement for the contracting parties. There are different versions of CSA, among which the most used are the 1994 Credit Support Annex (under New York law), and the 1995 Credit Support Annex (under English law).²⁰⁰ The selection between the two documents is depended on which type of legal nature of collaterals the parties pursued. Under the CSA of English law, the title of the collateral is transferred to the receiver, while under the CSA of New York law, the title of the collateral remains with the payer, and the receiver simply gets the security interest over the collateral.²⁰¹ CSAs set out collateralization rules that apply to the entire portfolio of the OTC derivatives (based on the standardized 2003 ISDA Collateral Asset Definitions), including, inter alia, details of the frequency with which collateral is to be posted, eligible collaterals, thresholds and minimum transfer amounts, the requirements for initial margin calls, re-hypothecation²⁰² and so forth.²⁰³ According to ISDA's 2009 Margin survey, 87% of market participants choose the ISDA CSAs for collateralization arrangement as opposed to the bespoke bilateral

management of bilateral exposures between dealers and non-dealers, as non-dealers may not have the same netting possibilities as dealers.)

¹⁹⁹ In consideration of different legal systems, the term of collateralization might be different, so the ISDA used a more general term "credit support" in lieu of "collateralization."

²⁰⁰ See, ISDA Margin survey, 2008, (Market participants can choose between five standard form of ISDA CSA, depending on the law governing the region in which the CDS is traded and on the type of collateral transfer chosen: the 1994 CSA under New York law (pledge transfer); the 1995 CSA under English law (full title transfer); the 1995 credit support deed under English law (charge); the 1995 CSA under Japanese law; and the 2001 margin supplement (which enables the market participants to select the collateral framework to be applied to their entire set of transactions, with a choice between New York law and English law). New York law was the most frequently used in 2008, with 60% of CSAs taking that form. The CSA under English law was used in 25% of cases.) available at <http://www.isda.org/c_and_a/pdf/ISDA-Margin-Survey-2008.pdf> (last visited on 4 November 2014)

²⁰¹ See Vinod Kothari, supra 19, "Credit Derivatives & Structured Credit Trading."

²⁰² See M. Singh et al., "Deleveraging after Lehman –Evidence from Reduced Re-hypothecation," IMF Working Paper 09/42, 2009, (Re-hypothecation is the practice of reusing posted collateral in another transaction, which has become extremely widespread. Collateral can be re-hypothecated under both the 1994 and 1995 CSAs, but with pledge transfers there is a limit of 140% of the collateral provider's debit balance, including initial margins paid. Re-hypothecation can generate a liquidity risk for the collateral provider through excess collateralization as a result of either a lag in collateral delivery or haircuts on securities posted as collateral. Limits on re-hypothecation reduce leverage and related risks within the financial system. In the aftermath of Lehman Brother's bankruptcy, there has been a strong reduction in the use of re-hypothecation.) available at <<https://www.imf.org/external/pubs/ft/wp/2009/wp0942.pdf>> (last visited on 4 November 2014).

²⁰³ ECB, supra 69, 2009, pp.45-46.

collateral agreements.²⁰⁴

The collateral posting requirements provided by CSAs for OTC are very similar with the margin-call practice in the futures exchanges. In effect, CDSs parties, who entered into the contracts using the CSA of ISDA master agreement, shall firstly post initial margins, then exchange collateral margins with each other on a daily basis or weekly basis according to the netting result of mark-to-market (MTM) risk exposures. The frequency of regular collateral margin calls can range from daily to biannual. Payments are often more frequent for riskier exposures.²⁰⁵ As required, the collateral margin calls should cover the changes in MTM values, following the bilateral netting of positions across the entire portfolio of derivatives, in the event that the residual exposure exceeds a given threshold.²⁰⁶ And the rating of the counterparty can determine this threshold, which can range from zero to large amounts.²⁰⁷ In the framework of CDS transaction, the protection buyer is the recipient of collateral when spreads are widening, while it is the other way round when spreads are declining. Nevertheless, the collateral to be posted is calculated on the basis of the aggregated value of portfolio of transactions covered by the ISDA Master Agreement, not on the basis of any individual transaction or only CDSs exposures.²⁰⁸

Therefore, according to the “margin-call” rule, it is the practice that before the bankruptcy of the CDS counterparties, the collaterals are posting between the CDS parties daily or weekly, and the in-the-money counterparty (collateral receiver), could either possess the full title of the collaterals using the CSA under English law, or take

²⁰⁴ ISDA, ISDA Margin survey, 2009, available at <http://www.isda.org/c_and_a/pdf/ISDA-Margin-Survey-2009.pdf> (last visited on 4 November 2014).

²⁰⁵ See ECB, *supra* 69, p.46.

²⁰⁶ ECB, *supra*, 2009, p.46.

²⁰⁷ *Ibid*, p.46.

²⁰⁸ When assessing the risk-mitigating role played by CSA-based margin call schemes, one should bear in mind that the mitigation of risk is somewhat more limited for CDS than for other OTC derivatives, due to the possibility of the CDS spread widening too quickly, resulting in a positive claim on the CDS-selling counterpart remaining unsecured until the next margin call. From a counterparty risk perspective there is therefore the risk, with a single-name CDS, of an unforeseen credit event occurring prior to the orderly re-pricing of the credit risk, with the result that CDS spreads widen sharply. Lehman Brothers' default was a classic example of such jump-to-default risk which, from the point of view of the protection buyer, negated much of the risk mitigating role of the collateral posted by protection sellers until the US dealer filed for bankruptcy protection. This is not the case with CDS indices, where the diversification offered by the index smooth out the effect of idiosyncratic developments.

the collateral as pledge with the CSA under New York law.

2.2 The trading rules of ISDA Master Agreement conflict with the pro-debtor bankruptcy rules

The bankruptcy law pro-debtor rules, as elaborated above, aim at promoting the revival of those firms that temporarily fall into financial distress, while the trading rules laid down in the ISDA Master Agreement aim at promoting the efficiency and safety of the OTC derivatives. The different goals these two set of rules pursue collide with each other, in particular in the case that a derivatives trader is on the brink of bankruptcy or has filed for bankruptcy.

Firstly, the single agreement mechanism under the ISDA Master Agreement is in confliction with the bankruptcy law cherry-picking rule. The cherry-picking provision empowers the bankruptcy administrator to assume the profitable executory contracts and reject the continual implementation of the non-profitable executory contracts, thereby raising the debtors' rehabilitation capability. However, the ISDA Master Agreement intentionally laid down a "single agreement" clause, under the umbrella of which all single transactions will be seen as a part of the whole transaction between the certain counterparties who have chosen the application of ISDA Master Agreement. Hence, if one of the counterparties of the derivatives trading filed for bankruptcy protection, the bankruptcy administrator could not execute their cherry-picking power, as the other counterparty would defend that all those derivatives transactions form a single transaction under the umbrella of the ISDA Master Agreement. So, either the bankruptcy administrator can assume the continual implementation of all the single contracts or reject all of them.

Secondly, the "close-out netting" provision conflicts with the bankruptcy law "automatic stay" and "preferential transfer" rules. The "close-out netting" term in the Master Agreement enable the counterparties of derivatives transactions terminate the contracts when one of the party defaults, including the event of bankruptcy filing. Yet, the "automatic stay" rule requires any unfinished transactions and cash flows should

be stopped in order to keep the integrity of the “bankruptcy estate.” Therefore, the counterparties in derivatives trading could terminate all transactions between them if the other party filed for bankruptcy protection, thereby reducing potential losses respected with other creditors.

Thirdly, the “margins-exchange” practice collides with the bankruptcy law “preferential transfer” rule as well. The “margins-exchange” between the derivatives traders is the main mechanism established by the ISDA Master Agreement. As the risk exposure of the outstanding derivatives contracts changes every day, so the counterparties shall post or call back collaterals from their counterparties every certain period. Hence, this rule will be in confliction with the “preferential transfer” provision in the bankruptcy law, given that these collaterals posted shortly before the bankruptcy petition of the counterparties would be seen as illegitimate preferential transfer if that counterparty has already been on the brink of insolvent. Obviously, the “preferential transfer” rule is also a concern for financial derivatives traders as to the operation of “close-out netting.”²⁰⁹

All in all, the OTC derivatives transaction practice, including CDS trading, under the ISDA master agreement institution collides with the pro-debtor rules in the bankruptcy law. As the ISDA Master Agreement is internationally used, the OTC derivatives practice was in collision with the bankruptcy laws in many countries, not just the U.S., but also EU member states. In order to cope with the bankruptcy law threat to the OTC derivatives industry, the main financial institutions, headed by the industry association ISDA, started to lobby legislators in those countries. Since the U.S. is the most important country for derivatives trading, they firstly targeted the U.S. Congress for limiting the application of pro-debtor rules to derivatives. Afterwards, as Professor Morrision argued, the financial lobbyists re-used their achievement in the United States to persuade other jurisdictions’ legislators, especially the EU, to do the

²⁰⁹ See also Christoph Henkel, “Harmonizing European Union Banking Resolution: Central Clearing of OTC Derivative Contracts Maintaining the Status Quo of Safe Harbors”, 22 *Transnational Law & Contemporary Problems* 81, 2013, p.6, (noting that “... for many creditors specifically counterparties to derivatives and swaps, the preference law is of major concern. It applied to settlement agreements, “close-out” and “set-off” before bankruptcy may generally become impossible.”)

same amendments.”²¹⁰ It shall be mention here that the countries reformed their bankruptcy laws following the U.S., giving bankruptcy law exemption to OTC derivatives industry, have their own consideration of keeping the competitiveness in this important financial sector around the world.

3. The erosion of the “pro-debtor” bankruptcy law rules in the U.S.

3.1 “Patch-work” exemptions for OTC derivatives trading before 2005

The United States was one of the earliest jurisdictions in the world providing bankruptcy law exemptions to derivatives. In 1978, when the U.S. bankruptcy law was codified into the Bankruptcy Code, special exemptions were given to commodity futures and commodity forwards. According to legislative material, this exemption was promoted by a financial lawyer Stuart D. Root, who was invited to testify before the U.S. Senate subcommittee on improvements regarding Judicial Machinery. The lawyer proposed that, “the commodity futures market is fragile, which extremely depends on the capital adequacy of the market participants, and unless the Bankruptcy Code addressees this fragility, the system will remain unnecessarily exposed.”²¹¹ Specifically, the operation of commodity market is based on margin calls, the immediately posting of collaterals and liquidation the accounts that are lack of adequate margin would be essentially important for maintaining a safe and efficient commodity futures market. Thus, the provisions of “automatic stay” and “preferential transfer” in the Bankruptcy Code have already posed threat to this market. Under the name of protection the safety of the commodities futures market, the U.S. Congress

²¹⁰ Morrison and Riegel, “Financial contracts and the New bankruptcy code: insulating markets from bankrupt debtors and bankruptcy judges,” Columbia Law School The Center for Law and Economic Studies Working Paper No. 291, 2006.

²¹¹ Steven L. Schwarcz and Ori Sharon, “the Bankruptcy-law Safe Harbor for Derivatives: A Path-Dependence Analysis,” Washington and Lee Law Review, Vol.71 No.3, 2014, p.7.

granted a limited exemption of “automatic stay” and “preferential transfer” for commodity futures and forwards.²¹² This exemption opened the green-light for financial derivatives. In 1982, the “safe harbor” for financial trading was further expanded to “securities and derivatives contracts.” In this amendment, it is also added narrow exemption from the automatic stay for “mutual debt and claim setoff” for the OTC derivatives.²¹³ The new “contractual right to liquidate” also gave certain counterparties the power to terminate and liquidate derivatives contracts upon insolvency of the debtor, thereby circumscribing the Bankruptcy Code’s ban on “ipso facto” clauses.²¹⁴ Then in 1984, the Bankruptcy Code was amended again, adding the repurchase agreements to the classes of derivatives.²¹⁵

With rapid market development of swaps, particularly the interest rate swaps, the OTC derivatives industry became worried about the existed bankruptcy law exemptions would not be sufficient to protect the swaps transactions, given that there were no explicit exemptions for swaps. In 1988, Senators DeConcini and Grassley introduced a bill to amend the Bankruptcy Code for swaps.²¹⁶ The bill was endorsed by ISDA, which urged the Congress of the United States to eliminate the risk that market liquidity would be restricted due to application of the Bankruptcy Code to swap transactions, particularly in periods of volatility.²¹⁷ Hence, in 1990 the Bankruptcy Code of the U.S. was amended again under the urge of ISDA. In the 1990 amendment, swaps transactions were added into the scope of bankruptcy law “safe harbor.” Also in this amendment, the concept of netting was firstly introduced to the

²¹² PL 95-598 (HR 8200), PL 95-598, SECTION 764(C), Nov.6, 1978, 92 Stat 2549. See also Steven L. Schwarcz and Ori Sharon, the Bankruptcy law safe harbor for derivatives: a path-dependence analysis, at 8.(stating that “the 1978 Bankruptcy Code excluded the power of a bankruptcy trustee to avoid the margin payments made by or to a commodity broker.”) PL 95-598 (HR 8200), PL 95-598, SECTION 362(b) (6), Nov.6, 1978, 92 Stat 2549. See also Steven L. Schwarcz and Ori Sharon, supra, 2014, at 8. (stating that “the Code also precluded the application of the “automatic stay” for “setoff of mutual debts and claims in connection with commodity futures contracts, forward commodity contracts, leverage transactions, options, warrants, rights to purchase or sell commodity futures contracts or securities, or options to purchase or sell commodities or securities.”

²¹³ Schwarcz and Sharon, supra 213, 2014, p.9.

²¹⁴ Jonathon Keah Hance, “Derivatives in Bankruptcy: Lifesaving Knowledge for the Small Firms,” 65 *wash. & lee l. rev.* 711, 2008, pp.739-40.

²¹⁵ Schwarcz and Sharon, supra 213, 2014, p.9.

²¹⁶ *Ibid*, p.10.

²¹⁷ ISDA, Statement of ISDA in report of S.2279, June 10, 1988, p.674.

US bankruptcy law.²¹⁸

Through the several times amendment to U.S. bankruptcy law, we observed that the U.S. legislators did not intend to give bankruptcy law exemption to all OTC traded derivatives, thereby they complied with a “patch-work” approach: stating from exemption for commodity and forward contracts in 1978, then successive exemptions for securities contracts in 1982, repurchase agreements in 1984, and swaps in 1990.²¹⁹ It seems that the U.S. legislators were cautionary and reluctant to promptly exempt these OTC financial contracts from the bankruptcy law. Even though, this “patch-work” amendment caused some confusion for the market, particularly about the scope of protected transactions and the range of protections available to counterparties.²²⁰

Firstly, the definition of “swap agreement,” though set down in 1990 amendment with a non-exhaustive list of swap-like transactions regarding the underlying assets of rates, currency, commodity, and cross-currency rate swaps; interest rate and currency options; rate caps, floors, and collars; and any other similar agreements.²²¹ None of these transactions was clearly defined by the Bankruptcy Code, thus the judges usually rely on standard market definitions.²²² Moreover, although flexible and seemingly exhaustive in scope, the definition proved worrisome because it had to be stretched to cover equity swaps, credit default swaps, total return swaps, weather derivatives, and other transactions that became increasingly popular after 1990.²²³ Secondly, the definitions of protected contractual rights have been equally problematic. The problem stemmed largely from the structure of the Code, which described the protected rights separately for each type of financial contract. Section 362 (b)(6) protected contractual setoff rights with respect to commodity, forward, and

²¹⁸ Vinod Kothari, *supra* 13, p.352.

²¹⁹ Edward R. Morrison and Joerg Riegel, “Financial contracts and the New bankruptcy code: insulating markets from bankrupt debtors and bankruptcy judges,” Columbia Law School The Center for Law and Economic Studies Working Paper No. 291, 2006. p.5.

²²⁰ *Ibid*, p.5.

²²¹ 11 U.S.C section 101 (53B), 2000.

²²² Morrison and Riegel, *supra* 221, p.8.

²²³ *Ibid*.

securities contracts, section 362 (b)(7) did the same for repurchase agreements, and 362 (b)(17) did it for swaps. Yet, the setoff between different type transactions under the master agreement, i.e. the cross-product closeout netting, is not clear viable or not.²²⁴

Therefore, even after several times amendments, there still did not exist clear bankruptcy exemptions for those lately developed types, like the CDSs. Besides, the cross-product transactions, for example the close-out netting between a CDS with a non-CDS transaction, were not included into the exemption scope.

3.2 The blanket exemption of Bankruptcy law pro-debtor rules in 2005 BAPCPA

In retrospect, the America's 2005 bankruptcy law reform was precipitated by the disaster of the Long Term Capital Management (LTCM). In 1999, the President Working Group (PWG) on Financial Market published a report,²²⁵ titled "Hedge funds, leverage, and the lessons of LTCM," in which, inter alia, made comments on the need to make further amendments to US bankruptcy laws to expand netting legislation.²²⁶ The PWG report highlighted the role "close-out netting" could play in preventing systemic turmoil. As claimed by the PWG, "the ability to terminate most financial market contracts upon an event of default is central to the effective management of market risk by financial market participants; close-out netting serves as a 'domino effect' constrainer, because it reduces the risk exposure of the

²²⁴ See Morrison & Riegel, "Financial contracts and the New bankruptcy code: insulating markets from bankrupt debtors and bankruptcy judges," p.8, (Stating that "by explicitly protecting setoff rights within groups of financial products, was the Code implicitly limiting the exercise of contractual setoff right across group of products? A limit on cross-product netting across groups of financial contracts would make counterparties vulnerable to the financial distress of debtors, a result which seems inconsistent with the Code's goal of reducing systemic risk in financial markets. ")

²²⁵ It could be pointed out here that the ISDA played a significant role in the drafting of the relevant provisions of the 2005 amendment and working in close collaboration with the President's Working Group. ISDA also prepared a position paper setting forth the need for the safe harbor expansion and proposing its statutory language. Moreover, ISDA participated in many of the hearings that led up to the eventual adoption of the amendment.

²²⁶ Vinod Kothari, *supra* 13, p.352.

counterparties to a failed debtor.”²²⁷ Namely, if the government would not have bailed out LTCM, the use of close-out netting rights by derivatives counterparties would have mitigated their losses, and hence reduced the “contagion risk” in the financial market. Based on this report, PWG urged the U.S. Congress to further exempt financial contracts from the application of bankruptcy law so as to promote efficiency and stability of the financial system.

The recommendations in PWG were then incorporated into the Bankruptcy Reform Act of 1999, which was finally enacted in 2005 as the Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA)²²⁸. In section 561 of the new Bankruptcy Code, the *ipso facto* clause was exempted for the securities contracts, commodity contracts, forward contracts, repurchase agreements, swap agreements, and master netting agreements.²²⁹ The termination, liquidation, or acceleration of or to setoff or net termination of those contracts by contractual terms, thereby shall not be stayed and avoided if the counterparties file for bankruptcy.²³⁰ Section 362 clause (b) provides for exceptions to the automatic stay rule. Among the various exceptions, the 2005 amendments have amended the existing exemptions under item (17), and added a new exception under item (27). The item (17) regards the right of set-off under swap agreements,²³¹ while the item (27) relates to the master netting agreements.²³² All in all, this amendment resulted in a “whole-market” exemption for

²²⁷ See Report of the President’s Working Group on Financial Markets (PWG Report hereinafter), “Over-the-Counter Derivatives Markets and the Commodity Exchange Act, p.19.

²²⁸ See Schwarz & Sharon, *supra* 213, p. 13, (Actually, the IX of the Bankruptcy Reform Act, known as the BAPCPA of 2005, makes amendments to the Bankruptcy Code, the Federal Deposit Insurance Act, and the Federal Credit Union Act. The amendments to the three statutes are substantively similar.)

²²⁹ U.S.C 11 section 563.

²³⁰ U.S.C 11 section 563.

²³¹ U.S.C 11 section 362(17), (under subsection (a), of the set-off by a swap participation of or financial participant of a mutual debt and claim under or in connection with one or more swap agreements that constitutes the setoff of a claim against the debtor for any payment or other transfer of property due from the debtor under or in connection with any swap agreement against any payment due to the debtor from the swap participant or financial participant under or in connection with any swap agreement or against cash, securities, or other property held by, pledged to, under the control of, or due from such swap participant or financial participant to margin, guarantee, secure, or settle any swap agreement).

²³² U.S.C 11 section 362(27), (under subsection (a), of the setoff by a master netting agreement participant of a mutual debt and claim under or in connection with one or more master netting agreements or any contract or agreement subject to such agreements the constitutes the setoff of a claim against the debtor for any payment or other transfer of property due form the debtor under or in

OTC derivatives.

3.2.1 Re-define “swap agreements”

As has been argued before, the definition of “swap agreements” was provided in the 1990 U.S. Bankruptcy Code amendment. In fact, that definition is also wide enough, which could include almost every kind of swaps referring different underlying assets, such as interest rate, foreign currency exchange, commodities and any others.²³³ In the new form of the definition, the ambit was unlimited broadened, even surmounted the essential structure of a “swap.” We could say that the U.S. legislators created a new definition for swap, which could encompass, though with some limitations, nearly every other type of derivatives. As explained in the BAPCPA, “now a swap agreement includes swaps, options, forwards, and futures on debt or equity,²³⁴ and there is also the familiar opening clause, making clear that nearly all “similar” agreements are covered as well.²³⁵ Hence, Professor Morrison and Riegel commentated that, “in its new form, essentially all derivatives have become ‘swap agreements’;” all parties to them, and all transfers under or in connection with them, could thereby enjoy the Bankruptcy Code’s protection.”²³⁶ It is the fact that nearly all the OTC derivatives contracts can be reduced to the form of options, forwards, swaps

connection with such agreements or any contract or agreement subject to such agreements against any payment due to the debtor from such master netting agreement participant under or in connection with such agreements or any contract or agreement subject to such agreement or against cash, securities, or other property held by, pledged to, under the control of, or due from such master netting agreement participant to margin, guarantee, secure, or settle such agreements or any contract or agreement subject to such agreements, to the extent that such participant is eligible to exercise such offset rights under paragraph (6)(7), or (17) for each individual contract covered by the master netting agreement in issue.)

²³³ Old section 101 (53B) of the Bankruptcy Code defined a swap agreement as a swap involving currencies, interest rates, commodities, or “any other similar agreement”, including “any combination of” or “master agreement for” such agreements. See U.S.C 11 section 101 (53B) (2000).

²³⁴ BAPCPA section 907 (a)(1)(E) (to be codified at 11 U.S.C section 101 (53B)(A)(ii)).

²³⁵ Morrison and Riegel, supra 213, p.13, (stating that “we say “nearly all” because the opening clause applies to “forward, swap, future, or option” agreements that (I) have been, are now, or become subject of recurrent trading in the swap markets, and (II) are written on one or more rates, currencies, commodities, equity securities, ...debt securities ..., quantitative measures associated with an occurrence ..., or economic or financial indices...”) also see BAPCPA section 907 (a)(1)(E) (to be codified at 11 U.S.C section 101 (53B)(A)(ii)).

²³⁶ Morrison and Riegel, supra 213, p.9.

and the combination of them.²³⁷

Apart from the re-definition of “swap agreements,” the BAPCPA, meanwhile, re-defined conceptions of other individual financial contracts.²³⁸ The BAPCPA inherited the structure of the earlier Bankruptcy Code, in the sense that it still provided the five basic types of protected financial contracts, namely the securities contract, swaps, repurchase agreements, forwards, and commodity contracts.²³⁹ Every definition now begins with a description of the product itself and then lists various related transactions, ending with an opening clause.²⁴⁰ For a swap transaction, all types of participants could get the bankruptcy protection, by contrast, the participants to other financial contracts would be eligible only after a series of qualifications have been achieved, yet the conditions for such qualifications are also loosed in BAPCPA.²⁴¹ Then the type of financial contracts would be decided by the judges.

²³⁷ See e.g. Norman M. Feder, “Deconstructing Over-the-Counter Derivatives,” 2002 Colum. Bus. L. Rev. 677, p.691. (Therefore, in America’s insolvency law, “swaps” has become almost a synonym to “OTC derivatives,” whereas it shall be notable that in the EU legal regime, the definition of “swaps” remains in consistence with the conventional one, which differentiates from forwards, futures and options.)

²³⁸ Although, now the new definition of swaps could encompass other types of derivatives, the U.S. legislators did not stop to amend other individual definitions. This style of legislation is actually unreasonable or unsound for lawyers in other jurisdictions for that it caused unnecessary lengthy and even conflictions. However, the U.S. Congress considered, the creation of the new definition of “swap agreements” caused no tension with other individual definitions, since the specific provision protected particular parties, but they do not rule out safe harbors for other counterparties under other provisions of the Bankruptcy Code.

²³⁹ See e.g. Morrison and Riegel, *supra* 213, p.10.

²⁴⁰ See for example the definition of “security contract.” Prior to 2005, it covered any “contract for the purchase, sale, or loan of a security, certificate of deposit, or group or index of securities.” 11 U.S.C section 741(7) (2000). In the new Code, that definition is replaced with a list: a “security contract” is “a contract for the purchase, sale, or loan of a security, a certificate of deposit, a mortgage loan or any interest in a mortgage loan, a group or index of securities, certificates of deposit, or mortgage loans or interest therein, ... any option on any of the foregoing, ... any repurchase or reverse repurchase transaction..., and any other agreement or transaction that is similar to an agreement or transaction referred to in this subparagraph. ” BAPCPA section 907 (a)(2) to be codified into 11 U.S.C section 741 (7)(A)(v).

²⁴¹ In order to provide a special status to “financial participant,” the following new definition has been inserted as section 101 (22A) of the bankruptcy Code:(22A) “financial participant” means—A) an entity that, at the time it enters into a security contract, commodity contract, swap agreement, repurchase agreement, or forward contract, or at the time of the date of the filing of the petition, has one or more agreements or transactions described in paragraph (1)(2)(3)(4)(5), or (6) of section 561 (a) with the debtor or any other entity (other than an affiliate) of a total gross dollar value of not less than \$ 1,000,000,000 in notional or actual principal amount outstanding on any day during the previous 15-month period, or has gross mark-to-market positions of not less than \$ 100,000,000 (aggregated across counterparties) in one or more such agreements or transactions with the debtor or any other entity (other than an affiliate) on any day during the previous 15-month period. Thus, any entity entering into a derivatives contract and holding the size of transactions listed above will be treated as

However, the discretionary re-characterization power of the judges has been greatly limited. The judges shall refer the case to an expert's opinion about the commercial practice of the trading contracts.²⁴² In other words, if the trade was marked a swap, or a forward, if such trades were accepted by the market as those, then the judges shall make their decisions on the practice. The BAPCPA provided clearly that only in the circumstance that the derivatives traders “with actual intent to hinder, delay, or defraud the debtor’s other creditor, a judge can unwind settlement payments.”²⁴³ But the evidence of such fraud is rare.²⁴⁴ Essentially, the broad definition of the swap agreement could prevent judges from re-characterizing the swaps, even though from the economic essence, the so called swaps are, in fact, forwards or options. In other words, the definition power of a derivatives contract would be largely granted to the financial market itself, and the judges shall respect to their practice. Thus, the judges’ power to intervene this complex market became extremely narrow before the crisis.

3.2.2 The provision of master netting

Before the BAPCPA amendment, the contractual right of netting across different financial derivatives transactions was not so unequivocal, which brought uncertainty for the OTC derivatives market, and it is the reason why in the U.S. the financial market tended to enlarge the ambit of “swap agreements,” given that under the ISDA master agreement, the derivatives parties could have the option to choose netting across different type of transactions, such as between CDSs and forwards. In this BAPCPA, a new definition of “master netting agreements” has been inserted as section 101 (38A), as a super-category with respect to the five basic financial contracts, which provided the rights of termination, acceleration, and setoff within and

“financial participant.”

²⁴² Before BAPCPA, the judges also relied on standard market definitions and the expert opinions to decide the nature of a complex financial contract.

²⁴³ BAPCPA § 1402(1) - (2) (to be codified at 11 U.S.C. § 548(a)(1)(A)).

²⁴⁴ Morrison and Riegel, *supra* 213, p.24.

across multiple financial transactions within a master agreement.²⁴⁵ Therefore, the primary effect of adding this new category is to give legal certainty to the clause of cross-product netting under the ISDA master agreement. But even beyond that need of ISDA master agreements, the BAPCPA amendment set forth the master netting, not just between derivatives contracts, but also amongst all the financial contracts, like securities contracts and repos. Hence, the close-out netting between CDSs contracts and other derivatives contracts under the same ISDA master agreement, when debtors fall into bankruptcy, became legally approved after the adding of this section of “master netting agreement.”

Till now, the U.S. Bankruptcy Code has changed the traditional patchwork approach (exempt the financial products one by one, i.e. the 1978 exemption of commodities futures, 1982 exemption of securities contracts, 1984 exemption of repurchase agreements, 1990 exemption to swap contracts) regarding to the protection against financial contracts. As argued the protection has become a whole market exemption from the bankruptcy law rules. To OTC derivatives, especially for the CDSs market, the new amendment means a total protected “safe harbor” that preclude the application of bankruptcy “automatic stay”, “preferential transfer” and the “cherry-picking” provisions. The financial derivatives industry succeeded in the lobby campaign in the U.S. Although the direct effect of the bankruptcy “safe harbor” is benefiting the derivatives trading institutions, the industry was brandishing a public-benefit slogan of “preventing systemic risk” due to the tightly interconnected derivatives market. Therefore, any contracts with the title of financial contracts would enjoy the safe harbors. Any collateral collected immediately before a bankruptcy petition and following the termination of a swap agreement cannot be attacked as a

²⁴⁵ 11 U.S.C section 101 (38A): “master netting agreement”—(A) means an agreement providing for the exercise of rights, including rights of netting, setoff, liquidation, termination, acceleration, or close out, under or in connection with one or more contracts that are described in any one or more of paragraphs (1) through (5) of section 561(a), or any security agreement or arrangement or other credit enhancement related to one or more of the forgoing, including any guarantee or reimbursement obligation related to 1 or more of the foregoing; and(B) if the agreement contains provisions relating to agreements or transactions that are not contracts described in paragraph (1) through (5) of section 561 (a), shall be deemed to be a master netting agreement only with respect to those agreements or transactions that are described in any one or more of paragraphs (1) through (5) of section 561 (a) ...

preference or fraudulent transfer.²⁴⁶

4. The bankruptcy safe harbor caused a “bank run” on “too-big-to-fail” OTC financial derivatives traders

As we have argued, the bankruptcy law amendments in the U.S. created a “bankruptcy safe harbor” for OTC derivatives trading, and the pro-debtor rules have been surmounted. Therefore, the OTC derivatives transactions were further favored by the law, which also is the underlying legal reason for the rapid growth of the speculative CDSs market. However, we intend to argue here that the “bankruptcy safe harbor” not only facilitated the CDSs transactions, but also caused a “bank run” effect to the “too-big-to-fail” traders, and directly caused the breakdown of these corporations, such as AIG. The collapse of these “too-big-to-fail” institutions directly escalated the 2008 financial crisis.

It is the fact that almost all the Wall Street financial institutions fell down in this financial crisis have relationship with their OTC derivatives trading, but we could not allege that the failure of the companies like Bear Sterns, Lehman Brothers are totally because of the derivatives trading, though the failure of these companies also affected by the “bank run” of their derivatives counterparties. However, when Lehman bankrupted, its massive derivatives positions greatly complicated its bankruptcy, the impact of its bankruptcy through interconnections with derivatives counterparties and other financial institutions contributed significantly to the severity and depth of the financial crisis.²⁴⁷ As a best example to elaborate the “bank run” effect caused by derivatives trading, the failure of AIG could exactly show this problem. We affirm that AIG was directly pushed down by the “bank run” of its CDSs counterparties.

As we have detailed the failure process of AIG in Chapter 1, the sudden demise of AIG was resulted from the rapidly increased collateral margins requirements of

²⁴⁶ Christoph Henkel, “Harmonizing European Union Banking Resolution: Central Clearing of OTC Derivative Contracts Maintaining the Status Quo of Safe Harbors”, 22 *Transnational Law & Contemporary Problems* 81, 2013, p.6.

²⁴⁷ FCIC Report, supra 69, p.343.

AIG's derivatives counterparties. In AIG's report of August 2008 for the second quarter of this year, it was disclosed that 17 billion dollars value collaterals, mostly cash and Treasury bonds, had been posted for its CDSs counterparties.²⁴⁸ On 16 September, AIG was downgraded by the main rating agencies, in response, the AIG's counterparties suddenly requested more collaterals according to the Model-to-Market margins call arrangement under the ISDA Master Agreement. After calculating, AIG estimated that it shall post about 20 billion dollars collaterals to its derivatives counterparties in the following weeks. But at that time, AIG's liquidity had already been nearly exhausted.²⁴⁹ Therefore, the analogous "bank run" on AIG occurred. However, this time it is not the line of people outside the bank hurry to take their deposits back, but the financial institutions asking for increased margin calls adjusted every day in accordance with the mark-to-market risk. It could be said that the bank run in the form of collaterals directly dismembered this insurance giant. Hence, AIG had to request the government's emergent capital injection. AIG was so interconnected with many large commercial banks, investment banks, and other financial institutions through counterparty credit relationships on CDS and other activities. The government concluded AIG was too-big-to-fail and had to deliver an aggregate number of 180 billion dollars to rescue it. Without the bailout, AIG's default and collapse could have brought down its counterparties, causing cascading losses and collapses throughout the financial system.²⁵⁰

Yet, according to the debtor-protection bankruptcy rules, this "bank run" could hardly happen to the OTC derivatives traders, as the early-termination, debt acceleration, and the increased collateral posting could be taken as the "preferential transfer", which will harm other creditors' benefit. Not even the termination and collateral requirement after the filing of bankruptcy of the debtor, which is forbidden by the "automatic stay" and the "cherry-picking" provisions. Therefore, if without the

²⁴⁸ This was disclosed in AIG'S 10-Q regulatory filing as of August 2008. See ECB, *supra* "CDS and counterparty risk," p.29.

²⁴⁹ Detailed process of AIG's fall, please refer to Chapter 1.

²⁵⁰ FCIC Report, *supra* 69, p.352.

“safe harbor” in the U.S. Bankruptcy Code for derivatives trading, AIG would not have worried about the potential required collaterals on 16 September 2008 and thereafter.

5. Conclusion

In this chapter, we elaborated in detail the bankruptcy law “pro-debtor” principle and its main rules, namely the rule of “automatic stay”, “cherry-picking” and “preferential and fraudulent transfer.” Thereafter, we looked into the special trading rules for the OTC derivatives practice established by the OTC derivatives industry association ISDA. Those special trading rules include the “single-agreement arrangement,” the “close-out netting” and “margins exchange.” We argued that the collisions between the bankruptcy pro-debtor rules and the ISDA Master Agreement rules is the direct reason drove the OTC derivatives industry to lobby the U.S. Congress and EU parliament to exempt bankruptcy law pro-debtor rules from applying to OTC derivatives. Furthermore, we advanced that the exemptions caused a bankruptcy “safe harbor” for OTC derivatives transactions, which not only promoted the proliferation of speculative derivatives, including CDSs trading, but also caused a similar “bank run” as to the derivatives traders, such as AIG. Therefore, it could be claimed that the erosion of the bankruptcy pro-debtor principle is the direct institutional reason for the escalation of the 2008 financial crisis when AIG failed.

On the other hand, we are always wondering that why AIG could sell out such a huge amount (400 billion notional value) of CDSs protections? Did the counterparties of AIG not worry about the creditworthiness of AIG? The “bankruptcy safe harbor” provision might be the answer. We are going to deeply inquiry this problem in the next chapter.

Chapter 5 The Circumvention of the Common Law

Doctrine of “Secret Lien”

In the prior chapter, we advanced the question that why AIG could sell out the huge amount of CDSs protection, and didn't the counterparties fear about the creditworthiness of AIG? After analysis of law, we found that the fundamental reason is that the common law doctrine of “secret lien” has been erosion by OTC derivatives transactions. To illustrate the logical reasoning, we are going to firstly elaborate this common law doctrine of “secret lien.”

1. Elaborate the common law doctrine of “secret lien”

1.1 Origin of the doctrine of “secret lien”

The famous commercial law Professor Peter Coogan once argued that “the history of commercial law could be deemed as the four-hundred-year struggle by debtors and their secured creditors to create security interests of various sorts in the debtors' property without affording any notice to other creditors, and the following demands by unsecured creditors for notice when all or part of the debtor's assets become subject to security interests.”²⁵¹ Dishonest debtors usually would ask some sophisticated secured creditors to collaborate with them to create “secret liens” (secret interest security) in exchange of higher loan interests or consolidated debtor-creditor relationship.²⁵²

The original intellectual underpinnings of the doctrine of “secret lien” could be

²⁵¹ Peter F. Coogan, “Public Notice Under the Uniform Commercial Code and Other Recent Chattel Security Laws, Including ‘Notice Filing’,” 47 Iowa L. Rev. 289, 1962, p.289.

²⁵² See e.g., Michael Simokovic, “Secret Lien and the Financial Crisis of 2008,” 83 American Bankruptcy Law Journal 253, 2009, (stating that “in the credit market, banks will compete with themselves to grasp client, especially when the client is a frequent borrower, such as those local main enterprises. Then, the debtors could use this kind of completion between banks to book its false creditworthiness through giving the cooperative bank a higher loan fee, or a heightened loaner-borrower relationship.”)

dated back to the sixteenth century England.²⁵³ In 1517 the England Parliament passed an Anti-Fraudulent Conveyance Statute that is commonly known as the Statute of 13 Elizabeth.²⁵⁴ According to this statute, any property transfers with the intention of hindering, delaying, or defrauding creditors shall be deemed as illegal and void.²⁵⁵ This statute could be considered as the first legislation of “fraudulent law,” from which the general attitude of common law towards debtors’ unfaithful behaviors was clarified. However, the common law doctrine of “secret lien” was developed till the early of the nineteenth century in the case of *Clow vs. Woods* in Pennsylvania of the United States.²⁵⁶

In this case, a tanner, Hancock, conveyed security interests on the hides and tanning equipment to his creditors, i.e. Clow and Sharp. However, the secured creditors neither took possession of these collateralized hides and tanning equipment nor recorded the security interest in the public register. In this circumstance, the tanner’s former partner, Poe, sued Hancock for his share of the value as to the firm. Then he obtained a positive judgment, which was then enforced by the local sheriff. In order to fulfil the enforcement, the sheriff auctioned the same hides and equipment that had been collateralized. Then the secured creditors, Clow and Sharp, sued the local sheriff to recover the proceeds of the sale, arguing that their security interest had priority over Poe’s claim.²⁵⁷

The appeal was rejected by the Supreme Court of Pennsylvania. Judge Gibson

²⁵³ See M. Simokovic, “Secret Lien and the Financial Crisis of 2008,” 83 *American Bankruptcy Law Journal* 253, 2009, p.256.

²⁵⁴ Douglas G. Baird and Thomas H. Jackson, “Fraudulent Conveyance Law and Its Proper Domain,” 38 *Vanderbilt Law Review* 829, 1985, p. 829.

²⁵⁵ See *Ibid*, Douglas G. Baird and Thomas H. Jackson, fraudulent conveyance law and its proper domain, 38 *Vanderbilt law review* 829, 1985, (Initially, this statute was passed under the intention of inhibiting a several hundred years practice by the debtors to avoid their debts and deceit their creditors in England. Until the seventeenth century, England had certain sanctuaries into which the King’s writ could not enter. A sanctuary was not merely the interior of a church, but certain precincts defined by custom or royal grant. And the debtor often removed themselves to one of these precincts only after selling their property to friends and relatives for a nominal sum with the tacit understanding that the debtors would reclaim their property after their creditors gave up or compromised their claims. The 13 Elizabeth Statute was passed to limit this practice, providing that the debtors cannot manipulate his affairs in order to shortchange his creditors and pocket the difference, and those who collude with a debtor in these transactions are not protected either.)

²⁵⁶ *Clow v. Woods*, 5 *Serg. & Rawle* 275, 1819 WL 1895.

²⁵⁷ See also Jonathan C. Lipson, “Secret and Liens: Verification and Measurement in Commercial Financial Law,” 21 *Emory Bankr. Dev. J.* 421, 2005, p.4.

opined: “a creditor ought not be suffered to secure himself by means that may ultimately work an injury to third persons ... where possession has been retained without any stipulation in the conveyance, the cases have uniformly declared that to be, not only evidence of fraud, but fraud per se. such a case is not inconsistent with the most perfect honesty; yet a court will not stop to inquire, whether there be actual fraud or not; the law will impute it, at all event, because it would be dangerous to the public to countenance such a transaction under any circumstances. The parties will not be suffered to unravel it, and show that, what seemed fraudulent was not in fact so. Would it be less against sound policy to suffer a vendor to remain in possession, under an agreement to that effect expressed in the conveyance, and thus to create a secret encumbrance on his personal property, when to the world he appears to be the absolute owner, and gains credit as such.”²⁵⁸ This judgment went beyond the sixteenth century anti-fraudulent law because the judges were not required to verify the “fraudulent intention” of the debtors. According to Judge Gibson’s articulation, the “secret” or “un-disclosure” status of the security interests per se constructed “fraud” to other creditors. The tanner’s ownership of his property, ostensibly free and clear of the rights of all others, would induce unwitting, and perhaps unsophisticated, creditor to extend unsecured credit at their peril.²⁵⁹ It is therefore that public disclosure (public notice) became a fundamental requirement in perfecting a security interest in Common law, while the “secret liens” shall be considered void and illegal.

1.2 Functions of the “secret lien” doctrine

The first and foremost function of the “secret lien” doctrine is its role in protecting contracting parties from credit risk of the counterparties. While sophisticated

²⁵⁸ Clow v. Woods, 5 Serg. & Rawle 275, 1819 WL 1895., p.280-81.

²⁵⁹ See J. Lipson, “Secret and liens: verification and measurement in commercial financial law,” 21 Emory Bankr. Dev. J. 421, 2005, p.5. (Also stated that “The emphasis in Clow case on physical possession may seem strange to modern readers. At the time, physical possession and recordation were the two primary means of providing notice of ownership of tangible property. As the economy became more complex and intangible property rights proliferated, the importance of physical possession declined.”)

creditors usually could require collaterals from the debtors, the less sophisticated creditors, such as small business creditors might not get collaterals when their counterparties are more powerful. Thus, the unsecured creditors will take more dangers of counterparty risk than the secured sophisticated creditors. However, if the debtors have rendered lots of “security liens” on its assets to the sophisticated and collaborative creditors without any record or transfer of possession, then the debtors could appear to be more creditworthy, thereby could get more loans from other creditors. Under this situation, the normal creditors could not accurately estimate the creditworthiness of the debtor, thus granted more loans to the debtor or do more business with the debtor. If the debtor bankrupted, the unsecured creditors would assume the losses while the secured creditors could get repayment from selling the collaterals. In this sense, the “secret lien” doctrine could protect the unsecured creditors from the counterparty risk.

Moreover, the doctrine of “secret lien” is also essential to maintain the healthy and stability of the whole financial system. Credit market is mainly based on confidence. In the aforementioned *Clow case* Judge Duncan concluded that “a lack of transparency threatens not only individual creditors, but the financial system as a whole.”²⁶⁰ In fact, if “secret lien” were permitted, the credit lenders will lose confidence to the borrowers, as they could not see the exact credit situation of the borrowers. Thus, the credit cost will arise, as the credit supply in the whole market would decline, if the credit risk rises upside since the opaqueness of the borrowers’ credit situations, which is detrimental to the health of the whole credit market. As argued by Professor M. Simokovic “a secret mortgage to secure a creditor ... should be valid and bind the property against creditors ... would be a reproach to the law. It ought not, it cannot be so. If it were so, it would put an end to all credit. Credit is given on ‘faith.’ I know not any doctrine that would tend to annihilate all credit, more than the establishment of such a principle.”²⁶¹ Therefore, the common law

²⁶⁰ See M. Simokovic, “Secret Lien and the Financial Crisis of 2008,” 83 American Bankruptcy Law Journal 253, p.257

²⁶¹ See, M. Simokovic, “Secret Lien and the Financial Crisis of 2008,” 83 American Bankruptcy Law

principle of prohibiting “secret lien” has the function of maintaining the confidence of the credit market, and thus promoted the health and stability of the whole financial system.

2. From the common law doctrine of “secret lien” to the Uniform Commercial Code

After the secret lien doctrine has been developed in the U.S., non-possessory security interest would be considered as void. However, this doctrine actually would greatly restrict the guarantee function of movable property, especially as for the valuable machinery. For instance, on the one hand the small business owner wants to pledge one machine in exchange of a favorable loan; on the other hand he must use that machine for manufacturing. But according to the secret lien doctrine, the pledger must transfer the possession to the pledgee, otherwise, the pledge would be illegal. This is the dilemma for the application of the “secret lien” doctrine. Therefore it is necessary to develop another way to publish the situation of security interest apart from the conventional way of possession transfer.²⁶² In order to deter and correct the problems of secret liens, the common law “recording system” has been developed.²⁶³ Recording has been viewed as a best means of publishing existed security on one’s assets while maximizing the usage of these assets.

In the 19th century America, actually, there already existed the recording system for real property, so this system later became the basis for constructing the recording system as for movable property.²⁶⁴ After the “secret lien” had been clearly articulated,

Journal 253,2009, p. 258.

²⁶² In fact, when the Clow v. Woods case happened in the early 19th century, the only perfection method of a personal property security interest is the conveyance of the possession of the goods and other assets. Hence, it is possible that the debtor and the secured creditors really did not have the intention to defraud other creditors, and they did not transfer the equipment just in order to facilitate the production of the debtor.

²⁶³ J. Lipson, “Secret and liens: verification and measurement in commercial financial law,” 21 Emory Bankr. Dev. J. 421, 2005, p.439, (stating that “Although these systems existed even before the American Revolution, they began to flourish later, in the early part of the nineteenth century.”)

²⁶⁴ See, “Secret and liens: verification and measurement in commercial financial law,” 21 Emory Bankr. Dev. J. 421.

the U.S. recordation system for the movable property mortgage gradually developed.²⁶⁵ However, in its early years, the requirements in relation to the perfection of these securities interest on movable properties were quite different among the different American states, which caused complexity and conflictions.²⁶⁶

In order to deal with this disordered situation, the U.S. enacted the Uniform Commercial Code (for short, UCC) in 1952 after more than 10 years legislation efforts.²⁶⁷ There are 9 articles in the UCC, actually an article equals to a chapter. The Article 9, i.e. “secured transactions,” aims at governing the creation of security interests on movable properties, including the “fixtures,” namely the goods that have become so related to particular real property that an interest in them arises under real property law.²⁶⁸

The UCC article 9 confirmed the “secured lien” doctrine, and moreover laid down a set of rules regarding how to perfect the security interests on movable properties, solving the disordered provisions among the different American states. According to different types of personal properties, such as financial assets, agricultural commodities, the UCC-9 provided very detailed perfection rules for creating security interests. In this dissertation, we do not intend to discuss all of them. But the common rule is that the perfection of the non-possessory security interest shall comply with the “debtor-location” rule.²⁶⁹ In other words, the debtors shall file the mortgage documents in their business operation location, and thereby the information searchers would be more easily to find the information of security interest on relevant debtor’s assets. And the searchers or filers no longer will have to make

²⁶⁵ The recordation for securities on general movable property is rarely available in civil law countries. From example, in France, the security interest on personal property could only be achieved by transfer possession. This rule is the same in China’s 2007 Property law (although with the exception of machines and industrial raw materials and semi-products.).

²⁶⁶ For example, some states just request the pledger to file a mortgage document, while other states require not just filing but also affidavits and acknowledgments of good faith. See M. Simokovic.

²⁶⁷ The most ambitious reform of American commercial law, UCC, was published after more 10 years joint drafting efforts by the National Conference of Commissioners on Uniform State Laws (NCCUSL) and the American Law institute (ALI). See Scott Pryor, “Revised Uniform Commercial Code Article 9: Impact in Bankruptcy, 7 Am. Bankr. Inst. L. Rev. 465, p.466 (All states in the US and the district of Columbia, have adopted article 9 of the UCC.)

²⁶⁸ See U.C.C. § 9-102(41) (2001).

²⁶⁹ See U.C.C. § 9-307

difficult discriminations of classes of collateral in order to determine whether to search or file in the jurisdiction where the debtor is located or where the collateral is located, except the exceptions.²⁷⁰

3. The “bankruptcy safe harbor” for OTC derivatives and the circumvention of the common law “secret lien” doctrine

Although “secret lien” mostly occurred in the case of security interest on movable properties, the “secret lien” could also take on other forms. In the essence, we believe that any form of transactions that attribute certain creditor priority in repayment, while other creditors do not know such priorities, such transactions could be deemed as “secret lien,” given that the inherent objectiveness of “secret lien” doctrine is always focused on impeding debtors’ efforts of increasing its apparent creditworthiness. After a complex recordation system has been established, “secret lien” transactions could hardly happen in relation to movable properties. However, before the 2008 financial crisis, with the rapid development of OTC financial derivatives market, a new form of “secret lien” had been created, especially regarding the CDSs transactions.

In fact, the perfect creation of a “secret lien” should just satisfy the following two conditions: (i) the creditors could get a priority in repayment when the debtor bankrupted, and the priority would not subject to any “secret lien” laws; (ii) the debtor is not required to carry out any disclosure obligation in relation to the transactions, in which “priority” have conveyed to certain creditors. According to the two criteria,

²⁷⁰ Hans Kuhn, “Multi-state and International Secured Transactions under Revised Article 9 of the Uniform Commercial Code,” 40 Va. J. Int’l L. 1009, (Describing that “there are four exceptions to the debtor-location rule, referring the perfection of non-possessory security interest in certain classes of collateral to the law of jurisdiction where the collateral is located. These exceptions include fixture filings in fixtures and security interest in timer to be cut and as-extracted collateral. Security interest in timer to be cut or as extracted collateral are perfected by filing a financing statement in the office designated for the filing or recording of a mortgage on the related real property. This is also the proper office if the statement is filed as a fixture filing. These exceptions simply take account of the fact that the law of the debtors location for fixtures filing would require filing in the state where the collateral is located anyway”)

OTC derivatives contracts could become perfect form of secret liens.²⁷¹

First of all, the OTC derivative transactions have been totally exempted from the pro-debtor bankruptcy rules after the 2005 amendment of the U.S. Bankruptcy Code. Namely, the OTC derivatives, including CDSs transactions were not subjected to the “automatic stay” “cherry-picking” and the “preferential and fraudulent transfer” provisions in the bankruptcy law. When the debtor filed for bankruptcy, the counterparty could set-off the transactions between them. Besides, most of the OTC derivatives contracts were signed under the ISDA Master Agreement, so the counterparties periodically exchange margin collaterals to each other according to the risk exposure variation. Hence the counterparties of the OTC derivatives could take relatively adequate collateral before the bankruptcy of their counterparties. As the consequence, the counterparties of the OTC derivatives transactions are basically guaranteed. It is also reasonable that if the insolvent debtor was a “too-big-to-fall” financial institution, then the derivatives counterparties would have more confidence that their transactions could be secured, as usually the government will bail these systemically important financial institutions out. Therefore, we believe the potential government bailout expectation reinforced the effect of secret lien.

Second, the CDSs, as other OTC traded derivatives, are privately negotiated. So, the traders were not required to disclose the contract information to the regulators and not even the public. And moreover, it is argued that unlike exchange traded derivatives, which are standardized, simplified, and priced by the market through frequent trading, the OTC traded CDSs are much more complex, and there are not market prices for them. So even though the CDSs traders voluntarily publish the trading information at times, the counterparties of the CDSs trader could not understand and estimate the real risk exposure of those CDSs contracts. In short, the CDSs market is extremely opaque.

Therefore, OTC derivatives, especially the CDSs, are perfect “secret liens,” the

²⁷¹ See M. Simokovic, “Secret Lien and the Financial Crisis of 2008,” 83 American Bankruptcy Law Journal 253, 2009.

traders of which could get protection against the counterparties' bankruptcy while the latter do not need to disclose the derivatives trading information. However, no OTC derivatives were considered void before the crisis. Thus, the "secret line" doctrine had been eroded due to the OTC derivatives transactions.

4. The circumvention of the common law "secret lien" doctrine and the failure of AIG

Before the crisis, AIG, and some other financial companies were the net CDS protection seller, while banks were the net protection buyers.²⁷² AIG was a typical one-way seller, though the gross notional exposure was only a tenth of the size of the gross exposures of the current largest CDS dealer,²⁷³ it is very risky once credit event happens. On 30 September 2008 the aggregate gross notional amount of credit derivatives sold by AIG was \$ 493 billion – or \$ 372 billion on a net basis.²⁷⁴ AIG fell into liquidity crisis in a very short period because of the suddenly increased collateral requirement and termination of the CDSs contracts mainly by its investment bank counterparties.²⁷⁵ However, we advanced in chapter 2 that the fundamental reason of AIG's failure is that it sold out too much CDS protections on mortgage related assets. Before the crisis, AIG sold roughly \$ 90 billion CDSs protection on CDOs. Then our question is always that why AIG could sell out this huge amount of

²⁷² According to Fitch's date of December 2006, the net bough amount of CDSs by banks was 304 billion, the net sold amount of CDSs by insurers was 395 billion, and the net sold amount of CDSs by monolines was 355 billion.

²⁷³ ECB, supra "Credit default swaps and counterparty risk," 2009, p.26. (It is also stated that "AIG was ranked as the 20th largest market participant in the Fitch derivative survey in 2006.")

²⁷⁴ AIG Credit presentation, financial results for quarter ended September 30, 2008, 10 November 2008. (This was an amount which could potentially affect the entire financial network. The net notional amount was almost double the aggregate net notional amount sold by all DTCC dealers combined at the end of October 2008).

²⁷⁵ AIG reported large losses totaling USD 13 billion for the fourth quarter of 2007 and the first quarter of 2008 owing to write-downs and losses related to US subprime mortgage market exposures during the period. In AIG's 10-Q regulatory filing as of August 6, for the second quarter of 2008, it disclosed that USD 17 billion collateral had been posed for its outstanding CDS contracts, with an unrealized loss of USD 15 billion outstanding for those contracts. On 15 September 2008, S&P downgraded AIG's long-term debt rating by three notches. As a result of those rating triggers, AIG estimated that it would require a further USD 20 billion in order to fund additional collateral demands and transaction termination payments, for which it had insufficient liquidity, and thus AIG had to apply for the government bailout. See ECB, Credit Default Swaps and counterparty risk, 2009, p.29.

CDSs, while lots of investment banks, hedge funds did not worry about AIG's own capability to compensate those CDSs protection should credit event happens? It seems that AIG used the secret lien strategy through CDSs to raise its leverages.

In fact, in the CDSs transactions, AIG, the protection seller, resembled a borrower who accepts a relatively small amount of money now in return for a promise to pay a larger amount of money in the future. The difference between a CDS contract and a traditional loan is that the repayment amount and date are contingent on a credit event. Put differently, AIG mixed borrowing with a directional bet.²⁷⁶ As Prof. Morrison and Riegel argued that "many financial contracts have a credit component; one party temporarily extends credit to the other."²⁷⁷ In this sense, AIG could be deemed as the potential debtor and its CDSs counterparties are the creditors. Although almost all AIG's counterparties are shrewd financial institutions,²⁷⁸ most of them did not actually realize the counterparty risk of AIG.²⁷⁹ As revealed in 2009, the AIG's net risk exposure to CDS contracts was \$ 372 billion, yet, this data was not known to AIG's counterparties, because that most of the CDSs contracts AIG sold were bespoke, which were not covered by the public data. In a scant regulation environment, no one will exactly know the risk exposure of AIG's CDS portfolio. Moreover, the CDSs

²⁷⁶ See ECB, credit default swaps and counterparty risk, 2009, p.24.

²⁷⁷ See Morrison and Riegel, supra, p.653.

²⁷⁸ AIG's main counterparties were: Societe Generale, Goldman Sachs, Deutsche Bank, Merrill Lynch, Calyon, UBS, Deutsche Zentral-Genossenschaftsbank, Barclays, Bank of Montreal, the Royal bank of Scotland. See ECB, Credit default swaps and the counterparty risk, 2009, p. 28. After the bailout, in 2009, AIG paid its CDS counterparties, Goldman Sachs, Merrill Lynch, Morgan Stanley, and Deutsche Bank as much as \$ 37 billion. See Mark Pittman, Goldman, Merrill collect Billions after Fed's AIG Bailout loans. Available at <<http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aTzTYtNHSg8>>, (last visited on 4 November 2014).

²⁷⁹ An exception is Goldman Sachs. A brief recap of the Goldman-AIG story is necessary. Goldman has revealed that it had \$ 20 billion in trades on with AIG, where it had bought protection on various toxic assets from AIG. Goldman believed this translated into \$ 10 billion risk to AIG, meaning that the mortgage assets might be worth as little as 50%. Against this \$ 10 billion of AIG risk, Goldman had \$ 7.5 billion in collateral from AIG. The rest of the risk, \$ 2.5 billion, was hedged with credit default swaps, whereby Goldman bought protection on AIG from a variety of highly rated banks. See James Keller, Goldman Sachs-AIG: its' likely worse than you think, http://www.realclearmarkets.com/articles/2010/01/13/goldman_sachs-aig_its_likely_worse_than_you_t_hink_97587.html, last visited on 23 October 2014. From 2006, Goldman Sachs took a more negative view of the mortgage market ... and Goldman was less hesitant than its rivals to ask for additional collateral. See John carney, here's the untold story of how AIG destroyed itself, available at <http://www.businessinsider.com/heres-the-untold-story-of-how-aig-destroyed-itself-2010-3>, last visited on 23 October 2014.

transactions are off-balance sheet of AIG, which made the investigation of the real exposure of AIG on CDSs impossible. And the industry organization ISDA actively resisted voluntary disclosure of CDS documentation before the crisis, insisting that this information is proprietary and shall be protected.²⁸⁰

Meanwhile, the CDSs counterparties of AIG have surely taken into account that their transactions could be terminated when AIG bankrupts or they could ask AIG to post collaterals corresponding to the underlying risk when the ratings of the underlying mortgage-backed assets depreciate. Thus, the bankruptcy safe harbor protection for CDSs counterparties render them a superior status vis-à-vis other creditors of AIG, which constructed a guarantee to them. Moreover, the potential government backup against a systemic important financial institution, like AIG, would further consolidate the guaranty effect to the CDSs trading counterparties. However, as for other creditors in general, the undisclosed CDSs transactions became a type of “secret lien,” which greatly damaged the creditors’ judgment ability as to the creditworthiness of AIG. Therefore, theoretically, the apparent creditworthiness and the leverage of AIG was raised than it actually was, which is a sound underlying legal reason that why AIG could sold excessive CDS protections on mortgage assets.

Just like the nineteenth century Judge asserted “the secret lien would not just hurt the unsecured creditors, but would probably threat the systemic stability of the financial market.” The “secret lien” of CDSs trading discouraged AIG’s counterparties to diversify the transactions with AIG, provided that only if they could be secured when AIG fell into bankruptcy. This scenario is the very description of “common land tragedy,” in economic theory, because no one would seriously consider the stability of the whole financial system when they bought too much CDS protection with relatively low cost from AIG. This could also be one of the reasons that why the CDSs market was so interconnected.

We mentioned before that the margin-exchange mechanism laid down could

²⁸⁰ See David A. Skeel Jr. and Frank Partnoy, “The Promise and Perils of Credit Derivatives”, 75 University of Cincinnati Law Review 1019, 2007

inhibit counterparty risk and at the same time control too risky transactions. But in AIG's case this mechanism did not work as normal, as the derivatives transactions with AIG were highly under-collateralized. The reason lies in that AIG, as an insurance company, was regulated by the state insurance regulators, and the capital reserve of an insurance company is much higher than an investment bank. So generally, CDS protection buyers had a stronger confidence towards AIG's creditworthiness. The reason might also be that AIG could give those counterparties who asked less or no collaterals favorable price of buying the CDSs protection.

We also would like to add an argument here that "losses act as a spark; widespread leverage is the powder keg."²⁸¹ Leverage can be "regulated" privately by creditors or regulated by government, but only if the extent of leverage is known.²⁸² The high leverage employed by AIG is embodied in two levels, one is that the "secret lien" of CDSs transactions made AIG looks more creditworthy, and less collateral were posted to its counterparties, thereby AIG could use its limited capital to sell more CDSs protections. Secondly, the CDSs contracts, per se, are high leveraged, as AIG need put little collateral before the contracts get matured, however, once credit event happens AIG shall repay the whole notional value of the contracts that are usually many times bigger than the premium fees AIG has reaped. For the high leverage of AIG, when the mortgage market declined in the end of 2007, AIG suffered rapidly increased collateral requirements from its CDSs contracts counterparties, and its equity was rapidly wiped out. If the CDSs transactions of AIG were transparent to the market, the CDSs market participants would have the ability to control AIG's leverage by buying less CDS contracts from it, however, as there is no regulation that required the market transparency, risk accumulated in AIG and ultimately threatened the whole financial system. As AIG was a systemic importance financial institution, the failure of which would cause most of the financial institutions suffer losses due to CDSs trading,²⁸³ the U.S. government had to use the taxpayers' money to rescue it.

²⁸¹ This expression is also see from M. Simokovic, *supra*, 2009, p.254.

²⁸² M. Simokovic, p. 255.

²⁸³ Take into account that if AIG defaulted, its counterparties could terminate the contracts. Yet, if they

5. Conclusion

In this chapter, we developed the argument that the “bankruptcy safe harbor” for OTC derivatives caused the erosion of the traditional common law doctrine of “secret lien.” After the erosion of this doctrine, the counterparty risk private-monitoring mechanism has been broke up. It seems to us that AIG used the CDSs trading to make money but with potential obligation to repay the money. While CDSs contracts could be quasi-secured under the bankruptcy safe harbor and the trading information was unknown to others, so the AIG always seems more creditable to others. This caused AIG could do much more transactions, and the counterparties of AIG were less vigilant to investigate and monitor AIG’s real creditworthiness. Therefore, we believe that the erosion of the common law doctrine of “secret lien” is an underlying institutional reason why AIG could sell out the huge amount of CDSs contracts and its final breakdown.

Till now in this part, we have argued the deregulation to OTC derivatives and the resultant erosion of the valuable legal doctrines undermined the integrity and stability of the financial system. So, the provisions regarding OTC derivatives in CFMA and the 2005 BAPCPA are imputable. But the question is that “should they be abrogated after the crisis?” This is a tough question, which entails strict cost-benefit analysis. So, firstly we shall appreciate the benefits of these rules regarding OTC derivatives. In fact, as we have advanced in this part, these pro-derivatives trading rules really have their positive sides. In terms of CFMA, which opened the gate for speculative transactions, promoted the liquidity of the derivatives market and thereby could reduce the cost of buying CDSs for hedging risks. As for the BAPCPA, which totally exempted OTC derivatives from the application to bankruptcy law pro-debtor rules, could also favor derivatives trading, but most importantly, cut down risk contagion chain among the derivatives traders and thus, to some extent, prevent the systemic risk of the financial system. But we think that without proper regulation, when one

want replace the same CDSs protection with some other CDSs dealers, the replacement cost would be extremely high, for that in a short time, lots of replacement of CDSs contract would happen.

kind of systemic risk was prevented, another form of systemic risk has been created before the crisis, given that excessive speculative CDSs transactions promoted the U.S. housing bubble and directly pushed down too-big-to-fall companies, especially the AIG.

Therefore, the wise way to re-regulate the OTC derivatives market is giving considerations to both the advantages and the disadvantages of these pro-derivatives trading legal rules that already existed. Namely, the regulation should impede excessive speculative derivatives trading from harming the stability of the financial system, meanwhile keeping the adequate liquidity of this industry. In the next part, we will focus on the regulatory reforms against the OTC derivatives trading in the European Union. The new regulations in EU against derivatives trading would be the institutional shield for preventing us from another similar crisis resulted from the OTC derivatives market.

Part III Re-regulate the OTC Derivatives Market: European Union's Regulatory Reform after the Crisis

Chapter 6 EU's Regulatory Reform I: Establish New Trading Infrastructure for the OTC Derivatives Market

After the 2008 financial crisis, the financial market regulators across the world have realized that un-regulation and de-regulation to the OTC derivatives market is one of the main reasons of this one-hundred-year-once crisis. In light of this, the main jurisdictions of international financial market began to re-regulate the OTC derivatives market, including the U.S. and the EU. In general, the initiatives in both jurisdictions across the Atlantic are similar to each other, though exist differences in special regulatory technical provisions, as the international regulatory reform against the financial market has been coordinated at the international level. This is necessary because the regulators have realized that without coordinated actions financial transactions will flow to those regions with the least regulation, thereby regulatory efforts in single state would be ineffective. In this part, we will focus on analyzing EU's comprehensive regulatory reform regarding to the OTC derivatives market, while the America's new regulations will be mentioned where relevant so as to give a comparative perspective.

The most important task for the new regulations is solving the systemic risk OTC derivatives trading could pose to the financial system. Specifically, we think the new regulations shall cope with three problems of this market, the too-interconnectedness of the market participants, the non-functioning mechanism of collateral management between the counterparties themselves, and the unlimited speculative transactions.

However, at the same time, the new regulations shall not inappropriately reduce the market efficiency. In achieving the two overarching goals, EU in 2012 enacted the “European regulation on OTC derivatives, central counterparties and the trade repositories,” also as usually called the “European Market Infrastructure Regulation” (for short “EMIR”). Beside this fundamental regulation specifically against the OTC derivatives market, EU also successively enacted several other specific laws dealing with particular risks of the OTC derivatives market. These laws consist of comprehensive regulatory rules against derivatives transactions, one complements another.

In the following, we are going firstly to analyze this fundamental EU regulation against OTC derivatives market, namely the EMIR. In our view, the approaches laid down in the EMIR are different with the traditional regulatory approaches, i.e. reinforcing administrative regulation. EMIR approaches mainly focus on creating a sound market trading infrastructure, and refraining unregulated OTC derivatives transactions within this infrastructure. Nevertheless, first of all, we will give a background introduction of the EMIR and then elaborate the regulatory approaches provided by EMIR.

1. Background introduction to the EMIR

1.1 International financial regulatory reform in relation to OTC derivatives

The 2008 global financial crisis has manifested the international regulatory collaboration system was functionless. In comparison, this financial crisis was resulted also due to the international “regulatory competition.”²⁸⁴ Namely, in order to compete with others in the sector of OTC derivatives, the main jurisdictions in the world, mainly the UK and the US, deregulated their laws as to derivatives trading, as

²⁸⁴ See e.g. Eric C. Chaffee, *Finishing the Race to the Bottom: An Argument for the Harmonization and Centralization of International Securities Law*, Seton Hall L. Rev. 1581, 2010.

we have articulated in Part II. This is, in effect, a “race-to-bottom” regulation competition. After the crisis, the regulators across the Atlantic clearly realized this problem. Thus, an international regulatory collaboration framework shall be set up before regulatory initiatives in individual jurisdictions. In fact, without coordinating with its international counterparts, EU’s own goal in “establishing a safe, responsible and growth-enhancing financial sector” would not be achieved.²⁸⁵

In the peak of the crisis in 2008, all spot lights were focused on the financial crisis. The leaders in the EU and the US also took the response to the crisis as the first priority. However, before the crisis, there does not exist an international organ, or coordinated mechanism to regulate the OTC financial derivatives. In this circumstance, the G-Twenty (G20) group was established.²⁸⁶ Soon the G20 organized an emergent Summit in Washington as of November 2008. The leaders collectively agreed on a comprehensive coordinated-strategy as to financial regulatory reform.²⁸⁷ Then in April 2009, the G20 held its second summit in London. In this summit, the G20 transformed the former Financial Stability Forum (FSF) to Financial Stability Board (FSB). Thus, a new international organ has been established with its mandate of coordinating national authorities, international standard setting bodies and international financial institutions to collectively address the vulnerabilities in the international financial system.²⁸⁸ In effect, the FSB became the executive organ, aiming at promoting consistent implementation of G-20 decisions among different

²⁸⁵ See European Commission, “A New Financial System for Europe,” available at <http://ec.europa.eu/internal_market/publications/docs/financial-reform-for-growth_en.pdf> , (last visited on 12 January 2015).

²⁸⁶ The G20 was evolved from the G7, which consists of a restricted group of heads of the most important economies. In the Pittsburgh G20 Summit leaders’ Statement, it is declared that “we designated the G20 to be the premier forum for our international economic cooperation.” See the G-20 2009(b), paragraph 19. Compared to other international organizations, such as the IMF and the World Bank that are international treaty-based organs, the G7 and then the G20 are self-appointed body, which also means the participants in the Summit meetings are not obliged to represent anything than the interest of their own nations. Yet, unlike the G7, the G20 reflects an explicit acknowledgment by the advanced countries that at least the “systemic important” Emerging Market Economies (EMEs) should have a voice in the deliberations of the body that charts the process of international cooperation.

²⁸⁷ See, Malcolm D. Knight, “Reforming the Global Architecture of Financial Regulation,” CIGI Working Papers No.42, September 2014, p.7.

²⁸⁸ See the official web of FSB, available at <http://www.financialstabilityboard.org/about/history/>>, last visited on 12 January 2015.

countries.²⁸⁹ In November 2009, the G-20 held its third Summit in Pittsburgh, in which a broad international financial reform programme, based on clear recommendations and timetables, has been advanced. The reform to the OTC financial derivatives market is one of the center pieces.²⁹⁰ Based on the FSB's earlier recommendations, the basic principles to re-regulate the OTC financial derivatives market was clearly declared in the G-20 Pittsburgh Summit Statement.²⁹¹ It states that "all standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subjected to higher capital requirements. We ask the FSB and its relevant members to assess regularly implementation and whether it is sufficient to improve transparency in the derivatives markets, mitigate systemic risk, and protect against market abuse."²⁹² Hence, the framework of the reform to the OTC financial derivatives market was already clear. After the Pittsburgh Summit, the G-20 members, the U.S., the EU etc., were starting to make domestic legislations for implementing their commitments in the G-20 meetings.²⁹³

Therefore, a new international coordinated mechanism in regulating the financial

²⁸⁹ See Malcolm D. Knight, "Reforming the Global Architecture of Financial Regulation," CIGI Papers No.42, September 2014, p.2.

²⁹⁰ FSB Chair's letter to G20 letters, 27 June 2010. (The focus of the work of FSB has been on the four core areas since the Pittsburgh Summit: 1)strengthening bank capital and liquidity standards; 2)reducing the moral hazard posed by systemically important financial institutions; 3)improving over-the-counter derivatives markets; and 4) enhancing incentive structures and transparency.) Available at <http://www.financialstabilityboard.org/2010/06/r_100627a/>, Last visited on 9 January 2015.

²⁹¹ See N. Moloney: "EU Financial market regulation after the global financial crisis: More Europe or More risks?" Common Market Law Review, 47(5) 2010, (Stating that "the other requested reforms in this summit include building high quality capital and mitigation pro-cyclicality; reforming compensation practices to support financial stability; cross-border crisis management resolution for systemically important institution; and the adoption of a single set of high quality global accounting standards.")

²⁹² See G20 Leaders Statement: the Pittsburgh Summit, available at <<http://www.g20.utoronto.ca/2009/2009communique0925.html>>, last visited on 12 January 2015.

²⁹³ As argued by professor M. D. Knight that, "The G20 Summits have become the highest-level executive decision-making body that established the framework within which macroeconomic policy coordination and comprehensive reform of the global architecture of financial regulation currently take place." See Malcolm D. Knight, Reforming the Global Architecture of Financial Regulation, CIGI Papers No.42, September 2014, pp.7-8.

market has been established. Although with potential limitations, the G-20 has injected substantial strength in international cooperation as to international coordinated financial regulatory reforms. Since then, the Members of the G-20 shall take consistent activities under this new framework. And the FSB will be responsible for monitoring the compliance of the G-20 commitments in the G-20 member states. However, we shall point out that, as this new international cooperation framework in coordinating financial regulation was not based on a formal international treaty, thus there is not legally binding effect of the G-20 summits commitments, and the efficiency of which might be restricted.

1.2 EU's financial regulatory architecture reform

In the 2008 crisis, apart from the lack of European Union level regulations to the financial market, it is also identified that the EU current financial market supervisory authorities were lack of appropriate regulatory power to timely and effectively intervene into the financial market.²⁹⁴ Thus, after the crisis it is urgent to reconstruct the European regulatory and supervisory structure, especially attribute more regulatory power to the European level authorities. In 2010, the EU enacted successively four regulations, in which a new European System of Financial Supervision (ESFS) was set up. the new structure includes a macro-level risk preventing body the European Systemic Risk Board (ESRB), and three micro-level risk monitoring bodies, namely the European Banking Authority (EBA), the European Securities and Market Authority (ESMA) and the European Insurance and Occupational Pensions Authority (EIOPA), which are collectively called the European Supervisory Authorities (ESAs). These new regulatory and supervisory organs have

²⁹⁴ After crisis the European Commission mandated a High Level Group, chaired by Mr. Jacques De Larosiere, the former governor of the French central bank, to analyze the problems exposed in the crisis and advice further actions the EU shall take on the view of better protecting citizens and rebuilding trust in the financial system. Among other weaknesses of the EU financial regulation regime, it is identified in the 2009 De Larosiere Report that the lack of adequate macro-prudential supervision and the deficiencies in the current micro-prudential structure contributed to the crisis. See Report of the High-Level Group on financial supervision in the EU, chaired by Jacques de Larosière, 25 February 2009.

started their work since January 2011. The ESRB is a newly established organ, which was created for preventing potential systemic risk of the European financial system, while the three ESAs are upgraded from their formers, namely the Committee of European Banking Supervisors (CEBS), the Committee of European Security Regulators (CESR) and the Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS) respectively. Before the reform, the CEBS, CESR and the CEIOPS were only consultative organs that did not have direct power to regulate the financial market,²⁹⁵ which manifested the inefficiency of the EU financial regulatory and supervisory structure.

The underlying rationale for setting up the ESAs was to ensure closer cooperation and exchange of information among national supervisors, facilitate the adoption of EU solutions to cross-border problems, and advance the coherent interpretation and application of EU regulatory rules.²⁹⁶ By preparing uniform standards and ensuring supervisory convergence and coordination the ESAs should shape the further development of a single rule book applicable to all 28 EU member states and thus contribute to the functioning of the single market. To this end, the ESAs have been assigned in the founding regulations and subsequent secondary Union legislation, regulatory, supervisory, financial stability and consumer protection roles and powers.²⁹⁷

²⁹⁵ Before the crisis, the EU's regulatory and supervisory regime to the financial market was based on the "4 level approach," designed by the Wise Men Group headed by Baron Lamfalussy in 2000. Under the "Lamfalussy structure", several Committees were established, including three Level 2 Committees and three Level 3 Committees. The level 2 Committees are the internal bodies of the European Commission, whereas the Level 3 Committees are independent organs. Respectively, they are CESR, CEBS and CEIOPS. However, they are designed just as technical advisory organs, which did not have direct regulatory and supervisory powers, the situation of which greatly impeded the integration of the financial regulations and the setup of a single rule book in the EU level. This also gave regulatory competition some space. Having seen the flaws regarding the micro-prudential supervision, the Larosiere Report proposed the reinforcement of the power of the Level 3 committees.

²⁹⁶ European Commission, Report on the operation of the European Supervisory Authorities (ESAs) and the European System of Financial Supervision (ESFS), Com (2014) 509 final, available at http://ec.europa.eu/finance/general-policy/docs/committees/140808-esfs-review_en.pdf , last visited on 4 March 2015.

²⁹⁷ The various powers include: (1) Developing draft technical standards and issuing guidelines and recommendations, respecting better regulation principles; (2) Issuing opinions to the European Parliament, the Council, and the European Commission; (3) Resolving cases of disagreement between national supervisors, where legislation requires them to co-operate or to agree; (4) Contributing to ensuring consistent application of technical rules of EU law; (5) A coordination role in emergency

In terms of the supervision to the OTC derivatives market, ESMA was the organ in charge of the supervision to the securities and derivatives market. In particular, ESMA will foster supervisory convergence both amongst securities regulators and across financial sectors by working closely with other ESAs. It is expected that the ESMA will maintain the advisory role. Nevertheless, the ESMA will be entitled to develop technical standards that, subject to the Commission's enforcement, will then be adopted as delegated or implementing acts. The ESMA, specifically, will have full responsibility to supervise the trade repositories established in EU territory and the European CCPs that operate their businesses across national borders. These aspects will be discussed in detail below. In short, a more powerful and efficient regulatory and supervisory structure in EU has been established. In terms of the regulation of the OTC derivatives market, the ESMA will play a very active and critical role.

1.3 The enactment process of EMIR

The reaction of the European Commission to the financial crisis is very rapid. Since October 2008, the European Commission has been working actively on an in-depth review of derivatives markets.²⁹⁸ On 17 October, the European Commissioner for internal market and services, Mr. McCreevy, called for a systemic look at derivatives markets, learning lessons from the financial crisis.²⁹⁹ On December 2008 the Council of the financial ministers claimed, as a first step and as a matter of urgency, it is necessary to create at least one European-based central counterparty for OTC derivatives clearing.³⁰⁰ After the breakout of the Eurozone Sovereign debt crisis, the legislative response to regulate the OTC derivatives market was further accelerated.

On 3 July 2009, the European Commission published its first Communication –

situations; (6) ESMA exercises direct supervisory powers for Credit Rating Agencies and Trade Repositories; (7) Collecting the necessary information to carry out their mandate. See supra, European Commission, Report on the operation of the European Supervisory Authorities (ESAs) and the European System of Financial Supervision (ESFS), Com (2014) 509 final.

²⁹⁸ European Commission, "Communication: Ensuring efficient, safe and sound derivatives markets," Com (2009) 332 final, p.2.

²⁹⁹ Ibid.

³⁰⁰ European Commission, "Commission Staff Working Paper Accompanying the Commission Communication – Ensuring efficient, safe and sound derivatives markets," SEC (2009) 905 final.

“Ensuring efficient, safe and sound derivatives markets” – which systemically analyzed the characteristics, especially the risk character, of the whole derivatives market and particular derivatives markets. Furthermore, in this communication, the Commission identified four complementary tools to reduce the negative impact of OTC derivatives market on financial stability: (i) increase standardization; (ii) use trade repositories; (iii) strengthen the use of Central Counterparty clearing houses (CCPs), and (iv) increase the use of organized trading venues.³⁰¹ These proposals were highly praised in the September Pittsburgh G-20 Summit by the national leaders, and in this Summit, the leaders committed that: “all standard OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements.”³⁰² It means that EU’s regulatory programme was basically accepted by other G-20 countries. On 20 October 2009, the European Commission published the second Communication – “Ensuring efficient, safe and sound derivatives markets: Future policy actions.” This Communication examines one by one the main shortcomings of the current derivatives market, both including the OTC market and the exchange-traded market. And it outlines the policy actions to address these problems, including reinforce international cooperation, distinguishing financial and non-financial counterparties, establishing stringent risk-preventing requirements for CCPs and some others.³⁰³

Based on these two Communications and abundant of consultations excised by the European Commission, the legislative procedure was initiated. On 15 September 2010 the Commission proposed to the Parliament and the Council the draft of the regulation. On 9 February 2012, the European Parliament and the Council reached an important

³⁰¹ European Commission, Com(2009) 332 final.

³⁰² See G20 Leaders Statement: the Pittsburgh Summit, available at <<http://www.g20.utoronto.ca/2009/2009communique0925.html>>, (last visited on 12 January 2015).

³⁰³ European Commission, “Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Central Bank: Ensuring efficient, safe and sound derivatives markets: Future policy actions,” Com (2009) 563 final.

agreement on a Regulation for more stability, transparency and efficiency in derivatives markets. It was a key step in the effort to establish a safer and sounder regulatory framework for European financial markets. On 4 July 2012, the regulation on OTC derivatives, Central Counterparties and Trade Repositories (also “EMIR” – European Market Infrastructure Regulation) was adopted and entered into force on 16 August 2012. This was a major development, which symbolized the fulfillment of the EU’s commitment in the G-20 Pittsburgh Summit.

Generally speaking, the Regulation ensures that information on all European derivative transactions will be reported to trade repositories and be accessible for supervisory authorities, including the ESMA, to give policy makers and supervisors a clear overview of the market situation. The regulation also requires standard derivative contracts shall be cleared through central Counterparties. Moreover, stringent organizational, business operation and prudential requirements as for the central clearing parties have also been laid down. In the following, we will analyze these newly established rules, aiming at mitigating systemic risk, and evaluate the effectiveness of them.

2. Main content of EMIR I: mandatory clearing through central counterparties

2.1 What is central counterparty clearing?

From the historical inquiry, central counterparty (also for short CCP) clearing has been used for more than a century as to various financial instruments.³⁰⁴ Since from the mid nineteenth century, equities have already been cleared through central counterparties since the mid of the nineteenth century. Shortly after the success in the stock market, CCP clearing was gradually introduced into the commodity futures

³⁰⁴ See Jeremy C. Kress, “Credit Default Swaps, Clearinghouses, and Systemic Risk: Why Centralized Counterparties Must Have Access to Central Bank Liquidity, 48 Harvard Journal on Legislation 49, p.55.

market.³⁰⁵ In the late of the nineteenth century, a bunch of private-operated commodity futures exchanges were established, in order to control the counterparty risk, the exchanges requested their traders to meet certain solvency standards and post margin collaterals. Actually, in the initial period, the exchanges are the body to manage the collaterals exchange activity for the trading counterparties. But they did not guarantee the losses of the traders. This situation changed afterwards. In 1891, the Minneapolis Grain Exchange firstly began to assure its trading members against nonperformance of their counterparties in specific transactions. Then in 1925, the Chicago Board of Trade (CBOT) clearinghouse agreed to serve as a “counterparty to all transactions on the exchange,” thus it became the first central counterparty to all its traders,³⁰⁶ which symbolized the advent of CCP clearing for derivatives market.

Actually, the CCP provides a guarantee mechanism for all its trading members. Thus the single traders, in general, would not have to worry about the counterparty risk. After entering into CCP clearing, all the bilateral negotiated derivatives contracts shall be novated through the central counterparty. In other words, the CCP will act as a “middle-man,” who will become the buyer of the seller and the seller of the buyer.³⁰⁷ Hence, the clearinghouses themselves will directly bear the costs of a party’s default, rather than the original contracting parties. In the CCP’s history, apart from few exceptions, CCPs have functioned consistently stable since CBOT’s landmark innovation.³⁰⁸ Even in times of market stress, CCPs have withstood high volatility and counterparty failures without incidents. Notably as well, the recent market crisis did not cause significant CCP disruptions. Until now, no CCPs have defaulted on the guarantees to their trading members.³⁰⁹

³⁰⁵ See Jeremy C. Kress, *supra* 307, “Credit Default Swaps, Clearinghouses, and Systemic Risk: Why Centralized Counterparties Must Have Access to Central Bank Liquidity.” p.55.

³⁰⁶ With this development, the modern practice of centralized clearing had begun, and CCP clearing spread rapidly for the exchange traded derivatives. It is reported that by the turn of the 21 century, all derivatives exchanges in the U.S. have adopted the CCP clearing mechanism.

³⁰⁷ See Timothy Sullivan, “Swapped Disincentives: Will Clearinghouses Mitigate the Unintended Effects of The Bankruptcy Code’s Swap Exemptions?” 80 *Fordham Law Review* 1491, at 1496.

³⁰⁸ *Ibid.* p.1496.

³⁰⁹ *Ibid.* p. 1497.

2.2 Mechanism of central counterparty clearing in mitigating risk

In fact, the original birth of CCP was a market-driven product due to the derivatives traders' need of reducing counterparty default risk. CCPs have proven their value during this financial crisis risk management. When Lehman filed for bankruptcy, the default of its huge volume of exchange traded derivatives contracts actually did not cause market turmoil. However, before the crisis the CCP clearing only apply to the derivatives traded on exchanges. The termination of OTC derivatives after Lehman, AIG and others failure, unfortunately, resulted in great market panic.

Compared to its original market driven approach, the CCP clearing requirements after this financial crisis was pushed by international financial market regulators. Having seen the advantages of CCP clearing, the London G-20 summit, held in April 2009, called for CCP clearing for all credit derivatives. Then in the 2009 September G20 Pittsburgh Summit, the leaders urged that all qualified OTC derivatives shall be clearing through central counterparties before the end of 2012, although CCP clearing would increase cost for the market participants. To justify this international reform proposal, it is warrant to firstly scrutinize the mechanism of CCP clearing in mitigating risk, including both the counterparty risk and the financial systemic risk.

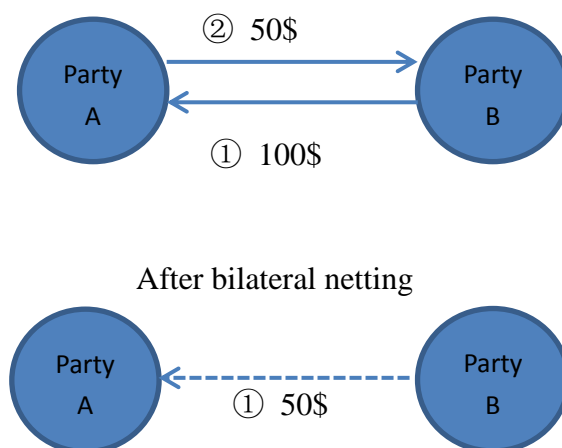
2.2.1 Multilateral netting

The first and foremost value of CCP clearing is its function in multilateral netting. Netting is a jargon in financial practice that has the same meaning with the legal term "set-off." Netting could reduce the risk exposure of the derivatives traders and raise the efficiency of capital usage. However, in a derivatives marketplace without employing CCP clearing, the counterparties of derivatives transactions could only offset their risk exposure in a bilateral manner. However, the risk mitigation role of bilateral netting was greatly restricted in the derivatives market, given that this market is highly interconnected. In order to appreciate the merit of multilateral netting

through central counterparties, we shall firstly have a look at the difference between bilateral netting and multilateral netting.

In case of bilateral netting, for example, we assume that Party A owes Party B 50 dollars, and Party B owes party A 100 dollars. Should Party A defaults, after bilateral netting, it is not necessary for Party B to pay A 100 dollars, instead just 50 dollars. Thus Party B's risk exposure would be halved since Party B does not need to pay Party A 100 dollars firstly and then sue A for the 50 dollars back. (See chart 7 below).

Chart 7: Bilateral netting



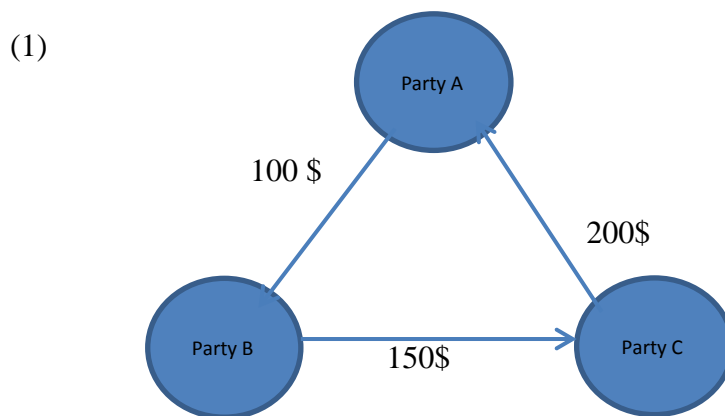
As for multilateral netting, let us suppose a simplified example. Assume there are three OTC derivatives traders in the market. They did business with each other in sequential transactions. Party A bought a derivatives contract of 100 dollars from Party B, Party B bought a dollars value derivatives contract from Party C 150, and Party C bought a dollars derivatives contract from Party A. In this case, each party traded with another, yet there are no reciprocal transactions. Hence, bilateral netting could not be employed.³¹⁰ Even though Party A has a net positive exposure of 100

³¹⁰ There is reason to believe that, absent centralized clearing, derivative market participants lack either the desire or the capability to coordinate information flows necessary to achieve the benefits of multilateral netting. Although OTC market participants could attempt to net exposures, such decentralized netting has inherent limitations compared to netting through a CCP. While some third-party providers have tried to facilitate multilateral netting, it is likely that CCPs could achieve

dollars, he still needs to pose collateral to Party B for guarantee. For the whole market, the aggregate risk exposure is 450 dollars (See the Chart 8 (1) below).

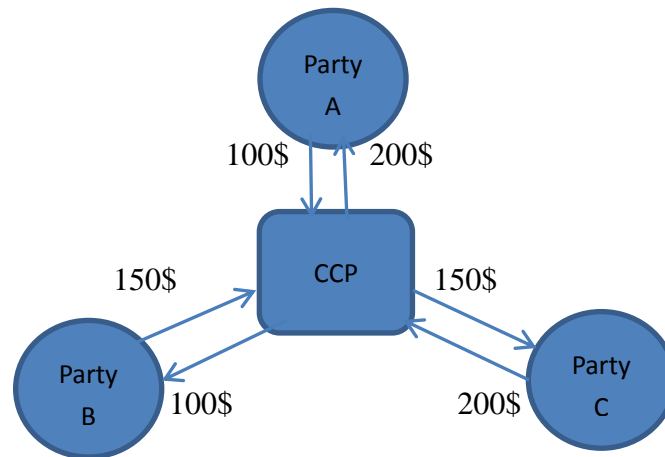
Now, suppose that a central counterparty has been introduced into the market, and all the three bilateral contracts shall be novated in the CCP. Namely, the CCP became direct counterparties of the Part A, B, and C. As the consequence, the relevant risk exposures between the parties were then turned to be the following. First, between the CCP and Party A, CCP buys a 200 dollars contract from Party A, and the Party A buys a 100 contract from the CCP; Party B buys a 150 dollars value contract from the CCP, and the CCP buys a 100 dollars value contract from Party B; Party C buys a 200 dollars value contract from the CCP, and the CCP bought a 150 dollars contract from Party C (See the Chart 8 (2) below). After novation, the bilateral netting could be done between the CCP and the respective parties, then the net risk exposures are: the CCP has a net negative risk exposure of 100 dollars against Party A, and two positive risk exposures of 50 dollars each against Party B and C (See Chart 8 (3) below).

Chart 8: Mechanism of multilateral netting

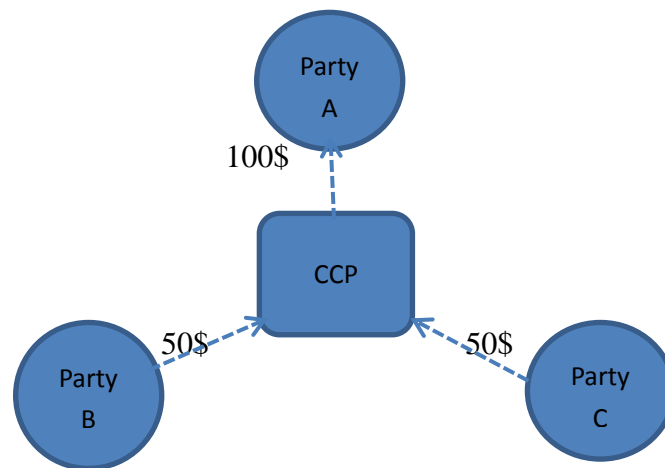


similar results more efficiently.

(2)



(3)



Therefore, the total risk exposure of the whole market has been reduced to 200 dollars ($100\$ + 50\$ + 50\$$). The potential risk of the whole financial market was mitigated thereof. And, multilateral netting could also reduce the putting of collaterals, thereby promoting the market efficiency. Take the situation of Party B for instance, if there does not exist a CCP in the market, it shall put collaterals to Party A due to the 100 dollars risk exposure for A. However, after CCP clearing, Party B would be the net risk exposure holder, thereby it shall not put any collateral to the CCP, instead, receives collaterals from the CCP.

More importantly, as the CCP will become the counterparty to all other derivatives traders as regards to the CCP clearing transactions, the market

interconnectedness will be greatly loosened. Take an extreme example, if all the derivatives transactions shall be centrally cleared through CCPs, the derivatives traders in the market will not have connection with each other anymore. Hence, the derivatives market would be interlocked. If one trader defaults, there would be no contagion risk because that the linkages between the derivatives traders have been cut down.³¹¹ In spite of this great merit, we should take into mind that the risk of the default of derivatives traders will not disappear, but the risk will be concentrated to the CCPs. A clearinghouse, just like an individual firm in a bilateral transaction, might be managed poorly or experience a series of unfortunate events. If CCPs default, the whole financial market could be exploded. Thus, the stable operation of CCPs is critical to maintain the safety of the whole financial system.

2.2.2 Professional risk management

Apart from the multilateral netting mechanism that would play a fundamental role in preventing counterparty risk and systemic risk, CCPs as professional risk management institutions could better prevent potential risk than the traders in several other respects. First, compared to the derivatives traders, CCP is a professional risk management institution. It was evidenced that, before the crisis bilateral collateral exchange usually did not function. For example, in many derivatives transactions with AIG, the counterparties did not require AIG to timely and periodically post collaterals. However, the CCPs could establish a more strict collateral procedure. And the derivatives traders who want to use the central clearing mechanism shall strictly obey with these collateral rules. And as a professional risk management organ, the CCPs could have more resources to efficiently manage the posted collaterals.

Moreover, centralized clearing can homogenize counterparty credit risk. CCPs

³¹¹ It is also believed that, through the CCP clearing, market exit will be facilitated. To illustrate, if Party C wants to exit the market, it could enter into an offsetting transaction with Party A; however, party A is unlikely to want to exit a profitable transaction and, if does so, he might demand a very high price. Alternatively, Party C could enter into an offsetting transaction with a different counterparty, but that arrangement would fail to eliminate credit risk from the system.

standardize the credit risk to which their members are exposed through novation; instead of facing the varying credit qualities of their trading partners, all clearing members of a CCP are exposed to a single, uniform credit risk of the CCP. Credit risk homogenization could significantly reduce the risk monitoring cost for the derivatives traders. Centralized clearing not only standardizes, but also might reduce, credit risk. Indeed, a CCP is likely to pose less counterparty risk to its members than bilateral parties would pose to one another.

Besides, it is also argued that CCPs can serve as an information gathering organ, as most of the derivatives transactions will be novated through the CCPs. The trading information, such as prices and volume could be recorded and preserved by the CCPs. Hence, the market transparency could be increased. This is another benefit of introducing CCP clearing.

2.3 Mandatory central counterparty clearing provisions in EMIR

The provision of mandatory CCP clearing as to the eligible classes of OTC derivatives is the core part of the EMIR in relation to implementing the G-20 meeting commitment of “central clearing all standardized OTC derivatives before the end of 2012.” We believe that, in the domain of legislation for regulating the OTC derivatives market, EU has erected a model for other countries to take experiences from. Notwithstanding, the OTC derivatives market is complex, not all the derivatives are suitable for central clearing. It is therefore that a sound rule for deciding the eligible CCP clearing derivatives shall be designed.

In implementing the central clearing obligation, the OTC derivatives counterparty that is subjected to the clearing obligation, shall become a “clearing member”³¹² of one CCP. The derivatives traders could not avoid the clearing obligation by deciding not to participate in a CCP. If those counterparties are not interested in becoming

³¹² European Market Infrastructure Regulation (EMIR), (EU) No.648/2012, Art. 2 (14) (“clearing member” means an undertaking which participates in a CCP and which is responsible for discharging the financial obligations arising from that participation.)

clearing members or they do not meet the participation criteria settled by the CCPs, they must enter into the necessary arrangements with clearing members to access the CCPs as “clients.”³¹³ It means that all the financial counterparties and non-financial counterparties subject to central clearing obligation shall enter into the CCP either as “clearing members” or as “clients.” The clearing members that clear transactions on behalf of their clients shall have the necessary additional financial resources and operational capacity to perform this activity. The CCP’s rules for clearing members shall allow it to gather relevant basic information to identify, monitor and manage relevant concentrations of risk relating to the provision of services to clients. Clearing members shall, upon request, inform the CCP about the criteria and arrangements they adopt to allow their clients to access the services of central clearing.³¹⁴

However, in order to mitigate the risk of the CCP, a set of stringent criteria of clearing member participation shall be justified. It is provided in EMIR that “a CCP shall establish, where relevant per type of product cleared, the categories of admissible clearing members and the admission criteria,” and “such criteria shall be non-discriminatory, transparent and objective so as to ensure fair and open access to the CCP.”³¹⁵ A CCP may deny the derivatives market players to become its clearing members, but only after comprehensive risk analysis and reply to that applicant in justified writing.³¹⁶

³¹³ European Commission, “Proposal for a Regulation of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories,” (European Commission Proposal for EMIR, hereinafter) COM(2010) 484 Final, P.7. And, it is provided in Art.2 (15) of EMIR that “Client means an undertaking with a contractual relationship with a clearing member of a CCP which enables that undertaking to clear its transactions with that CCP.”

³¹⁴ EMIR, Art. 37 (3).

³¹⁵ EMIR, Art. 37 (1). The criteria that restrict access shall be permitted only to the extent that their objective is to control the risk for the CCP.

³¹⁶ See EMIR, Art.37 (5).

2.3.1 The ambit of mandatory central counterparty clearing

2.3.1.1 The determination process of eligible clearing OTC derivatives

CCP clearing is internationally agreed as the most important approach to re-regulate the OTC derivatives market. The European Commission believes that there is no adequate incentive for the derivatives traders to voluntarily enter into central clearing. It is therefore mandatory CCP clearing for standardized OTC derivatives contracts is necessary to deliver its international commitment. Nevertheless, not all kinds of OTC derivatives are standardized and hence suitable for central clearing. Forcing a CCP to clear OTC contracts that it is unable to risk-manage may have adverse repercussions on the stability of the system.³¹⁷ In order to increase the function of CCP clearing, a delicate process shall be devised to ensure that a clearing obligation for OTC derivatives contracts will in practice achieve its final objective of reducing risk in the financial system, rather than increasing it.³¹⁸ There are strong reasons for CCP clearing being located in Europe, relating to regulatory, supervisory and monetary policy concerns. If a CCP is located in Europe, it is subject to European rules and supervision. EU Supervisors will have undisputed and unfettered access to the information held by CCPs. It is also easier for European authorities to timely intervene to monitor the risks of a European based CCP. Under this consideration, the European Commission proposed a “two-way” approach for identifying eligible types of OTC derivatives, namely the so called “bottom-up” and “top-down” approaches.

Firstly, the “bottom-up” approach means that where a competent authority of the EU member states authorizes a CCP to clear a class of OTC derivatives, that competent authority shall immediately notify the authorization to ESMA.³¹⁹ Within six months of receiving notification from the relevant competent authority, ESMA shall, after conducting a public consultation and after consulting the ESRB and, where

³¹⁷ EMIR, recite 14.

³¹⁸ Ibid.

³¹⁹ EMIR, Art.5 (1).

appropriate, the competent authorities of third countries, develop and submit the regulatory technical standards to the European Commission for endorsement, specifying whether that kind of derivatives contract is suitable for mandatory central clearing obligation.³²⁰ Essentially, this approach is a market-driven approach on the base of derivatives traders' applications. In practice, the derivatives market players want the CCP clearing service shall firstly submit application to CCPs, and then the CCPs request clearing authorization from the member state regulatory authority. It is the fact that market participants sometimes voluntarily enter into CCP clearing for mitigating the counterparty credit risk, though with increased transaction costs. But in most cases, the traders do not want the increase of the cost, and thus escape from central clearing. So, it is not wise to leave the fulfilment of G20 commitment entirely on the initiatives of the derivatives industry itself.³²¹

Secondly, the “top-down” approach has also been stipulated in the EMIR, implementing the “bottom-up” approach. It provides in the EMIR that, “ESMA shall, on its own initiative, after conducting a public consultation and after consulting the ESRB and, where appropriate, the competent authorities of third countries, identify, in accordance with the predetermined criteria, the classes of derivatives that should be subject to the clearing obligation, but for which no CCP has yet received authorization.”³²² As regards to the criteria of deciding the eligibility for central clearing, the ESMA has been entrusted to draft “regulatory technical standards.” ESMA shall take into account the following three standards: (i) the degree of standardization of the contractual terms and operational process of the relevant class of OTC derivatives; (ii) the volume and liquidity of the relevant class of OTC derivatives; (iii) the availability of fair, reliable and generally accepted pricing information in the relevant class of OTC derivatives.³²³ Potential systemic risk of the class of derivatives contracts is the main concern of ESMA in determining the

³²⁰ See EMIR, Art.5 (2).

³²¹ European Commission, Proposal for EMIR, COM(2010) 484 Final.

³²² EMIR, Art.5 (3).

³²³ EMIR, Art.5 (4).

qualified CCP clearing derivatives and in drafting concrete regulatory technical standards. The power in relation to the adoption of the relevant regulatory technical standards has been delegated to the European Commission.³²⁴ Therefore, under the “top-down” approach, ESMA, per se, will have the right to identify and capture those contracts in the market that are qualified for central clearing, but not yet being cleared by any European based CCP.³²⁵

2.3.1.2 Differentiate clearing obligation between financial counterparties and non-financial counterparties

Although the legislation of EMIR aims at controlling and reducing systemic risk with regard to unregulated OTC derivatives transactions, the drafters of EMIR did not want to see the new mandatory central clearing obligation improperly damage the efficiency of this market. The legislators especially did not want to improperly affect the hedging-purpose transactions traded by non-financial counterparties. Non-financial counterparties often enter into the derivatives market for hedging the existed risks derived from their commercial activities. For example, the airline companies bought oil futures for avoiding the risk of oil price appreciation in the future. Thus, except for some corporations, most of them do not frequently traded derivatives, and they usually are not systemically important to the financial system in terms of trading volume and the interconnectedness with other financial institutions. Hence, it is necessary to differentiate the mandatory central clearing requirement between the financial counterparties and non-financial counterparties. As declared by the European Commission, non-financial counterparties will in principle not be subject to the rules of this regulation, unless their OTC derivatives positions reach a threshold and are considered to be systemically important.³²⁶

³²⁴ Ibid.

³²⁵ European Commission, Proposal for EMIR, COM(2010) 484 Final.

³²⁶ European Commission, Proposal for EMIR, COM(2010) 484 Final. (For example, this may be the case for energy suppliers that sell future production, agricultural firms fixing the price at which they are going to sell their crops, airlines fixing the price of their future fuel purchases or any commercial

EMIR specifically distinguished the different mandatory central clearing requirements towards financial counterparties and non-financial counterparties.³²⁷ First of all, it is provided that all the transactions concluded between two financial counterparties shall be subjected to the clearing obligation.³²⁸ Yet, as to the transactions involving non-financial counterparties, namely those contracts entered into between a financial counterparty and a non-financial counterparty or between two non-financial counterparties, mandatory central clearing obligation should only be triggered when certain provided conditions are satisfied.

In the proposal of EMIR, the European Commission claimed that “excluding non-financial firms entirely from the mandatory clearing obligation would diminish the effectiveness of the CCP clearing.”³²⁹ Firstly, some non-financial counterparties are active participants in the OTC derivatives market, and they may also take systemically important positions. Secondly, a full exclusion of non-financial counterparties could lead to regulatory arbitrage. A financial counterparty could easily circumvent the central clearing obligation by establishing a new non-financial entity and direct its OTC derivative business through it.³³⁰ The Commission also considered that EU’s approach should promote global regulatory convergence. As the U.S. does not provide a complete exemption for non-financial counterparties, EU shall not as well.³³¹ In views of the above, EMIR provides a procedure that helps to identify the non-financial institutions with systemically important positions in OTC derivatives and subject them to the clearing obligation. The essential part of this procedure is the “clearing threshold” provision.³³²

companies that must legitimately hedge the risk arising from their specific activity)

³²⁷ In EU’s legal framework, financial counterparties encompass investment firms, credit institutions, insurance undertakings, assurance undertakings, reinsurance undertakings, undertakings for collective investment in transferable securities (UCITS), institutions for occupational retirement, and alternative investment fund, provided by respective EU regulations.

³²⁸ EMIR, Art.4 (1).

³²⁹ European Commission, Proposal for EMIR, COM(2010) 484 Final.

³³⁰ Ibid.

³³¹ Ibid.

³³² In determining the “clearing thresholds,” ESMA will draft the regulatory technical standards, taking into account the systemic relevance of the sum of net positions and exposures per counterparty and per class of OTC derivatives.

Firstly, where a non-financial counterparty takes positions in OTC derivatives contracts and those positions exceed that clearing threshold, the non-financial counterparty shall immediately notify ESMA and the competent authority of the member state.³³³ The timely notification of the reach of the “clearing threshold” will allow financial authorities to identify non-financial counterparties that have accumulated significant positions and monitor its potential systemic risk. The non-financial counterparties that have traded derivatives above the “clearing threshold” might be requested to explain the motivation of these transactions.

Secondly, if the “rolling average position” over 30 working days exceeds the threshold, that non-financial counterpart will become subject to the clearing obligation for the future contracts, and clear all relevant future contracts within four months after becoming subject to the clearing obligation.³³⁴ In other words, if that non-financial counterparty, has become subject to the clearing obligation, subsequently demonstrates to the competent authority that its rolling average position over 30 working days does not exceed the clearing threshold, it shall no longer be subject to the clearing obligation.³³⁵

Therefore, the value of the “clearing threshold” would be very important for the non-financial counterparties in the derivatives trading, once the volume of their derivatives position exposure exceeded the threshold, they might be subject to the clearing obligation, depending on its rolling average position in the next 30 working days and whether that kind of derivatives have been authorized by ESMA to be mandatory for CCP clearing. If the non-financial counterparties do not intend to assume the increased CCP clearing cost, they could monitor their trading position under the “clearing threshold.”

³³³ See EMIR, Art.10 (1).

³³⁴ Ibid.

³³⁵ EMIR, Art.10 (2). It also provided that “in calculating the positions, the non-financial counterparty shall include all the OTC derivative contracts entered into by the non-financial counterparty or by other non-financial entities within the group to which the non-financial counterparty belongs, which are not objectively measurable as reducing risks directly relating to the commercial activity or treasury financing activity of non-financial counterparty or of that group.” EMIR, Art.10 (3).

2.3.2 Requirements for maintaining the stability and resilience of CCPs

After mandatory CCP clearing requirement entering into effect, the majority of OTC derivatives trading will be centrally cleared in CCPs. Correspondingly, the default risks of the counterparties of CCPs will also be concentrated on them. It is therefore that how to control the potential risk of the failure of CCPs is the utmost important consideration legislators shall take into account. Especially, CCPs will locate in the center of the derivatives market, and thereby becoming the systemically important institutions, the failure of which will directly break down the whole financial system. Thus, a set of stringent risk-prevention rules shall be designed so as to control excessive risky operations of CCPs. Based on this consideration, the European Union proposed a series of rules aiming at increasing the CCP's capability of coping with extreme but plausible risk, especially in exceptional market circumstances. These rules were finally written into the EMIR, which include strict authorization and supervision, sound "risk-prevention capital composition," "default water-fall," and stringent organizational and operational requirements.

2.3.2.1 Authorization and supervision to CCPs

To ensure that a CCP could have adequate capability to carry on central clearing and assume the corresponding risk, a strict and harmonized authorization and supervision arrangement will be very important in the European Union. In the legislation process, the European Commission considered that "the national competent authorities should retain the responsibility for authorizing (including withdrawal) and supervising CCPs, as they will remain best placed to examine how the CCPs operate on a daily basis, and to carry out regular reviews and to take appropriate actions, where necessary."³³⁶ This opinion was adopted by the European legislators. It is stipulated in article 14 of the

³³⁶ European Commission, Proposal for EMIR, COM(2010) 484 Final, p.9.

EMIR that, “where a legal person established in the Union intends to provide clearing services as a CCP, it shall apply for authorization to the competent authority of the Member State where it is established.”³³⁷ In specific, the applicant shall firstly submit an application in relation to central clearing authorization to the competent authority of the member state, providing all information necessary to satisfy the examination by the competent authority when the applicant was established. The information provided in the application shall prove that the applicant has established, at the time of authorization, all the necessary arrangements to meet the requirements for operating central clearing service laid down in EMIR.³³⁸

Once a CCP has been authorized in one member state, it could effectively exercise central clearing around the EU territory.³³⁹ Given this cross-border business nature and the systemic importance of CCPs, uniform criteria in the EU for authorization shall be justified.³⁴⁰ EMIR requires that the competent authority of the member states shall immediately transmit all the information received from the applicants to ESMA and the “College.”³⁴¹ In deciding whether a CCP is qualified for authorization, the competent authority shall take reference to the opinion of the College and ESMA. Where the CCP’s competent authority does not agree with a positive opinion of the College, its decision shall contain full reasons and an explanation of any significant deviation from that positive opinion. Where all the members of the College, excluding the authority of the member state that applicant CCP located, reach a joint opinion by mutual agreement, that the CCP shall not be authorized, that CCP shall not be authorized. Furthermore, if two-thirds of the College

³³⁷ EMIR, Art.14 (1).

³³⁸ See EMIR, Art.17 (1)(2).

³³⁹ EMIR, Art.14 (2).

³⁴⁰ On the other hand, a CCP’s clearing members may be established in different member states and they will be the first to be impacted by the CCP’s default, it is imperative that all relevant competent authorities and ESMA be involved in the authorization and supervisory process. This will avoid divergent national measures of practices and obstacles to the proper functioning of the internal market.

³⁴¹ EMIR, Art. 17 (2). The College, in fact, is a committee composed by relevant financial regulators, the establishment of which is to pursue a harmonized authorization and supervision towards CCPs established in EU territory. The college should consist not only of the competent authorities supervising the CCP but also of the supervisors of the entities on which the operations of that CCP might have an impact, namely selected clearing members, trading venues, interoperable CCPs and central securities depositories. See Recite 53 of EMIR, and see EMIR article 18.

has expressed negative opinions, when a joint opinion by mutual agreement has not been reached, the final decision will be taken by the ESMA, and the member state authority shall comply with that decision of EMSA.³⁴²

Regarding the daily supervision and oversight to CCPs, except for exceptional circumstances, EU level regulator will not intervene, and the supervisory power has been entrusted to member state authorities. Nevertheless, EMIR requests member states to ensure appropriate administrative measures that can be taken or imposed against the natural or legal persons responsible for non-compliance with this regulation, and those measures shall be effective, proportionate and dissuasive.³⁴³

2.3.2.2 Risk-prevention financial capital wall

In order to prevent potential losses due to the liquidity risk, operational risk and especially the default risk of the CCPs' clearing members, a CCP should have adequate financial resources in place to deal with the default of these potential risks. In this regard, EMIR requires the CCPs to establish adequate risk-prevention financial resources to ensure their stability and continual business operation. In deciding the amount of the risk-prevention financial resource, the CCPs must take consideration of the extreme but plausible market situations.

First, to be authorized by the competent authority, a CCP shall have a permanent and available initial capital of at least EUR 7.5 million.³⁴⁴ The CCPs' initial capital, including retained earnings and reserves, shall be proportionate with the risk stemming from their activities. A CCP's own capital is the last line of defense in the

³⁴² See EMIR, Art.17 (4). The role of ESMA in the authorization procedure also embodied in that ESMA will draft detailed technical criteria for the member states competent authorities to decide the authorization of CCPs. EMSA will facilitate the College to make an opinion. And ESMA will also have the direct responsibility of authorizing CCPs of third countries to perform activities and services in Europe Union. To obtain the authorization of the ESMA, a special procedure shall be carried out. Firstly, the European Commission has ascertained the legal and supervisory framework of that third country as equivalent to the EU one, namely that the CCP is authorized and subject to effective supervision in that third country. Secondly, ESMA has established co-operation arrangements with the third country competent authorities. After these two pre-conditions have been satisfied, the third countries' CCPs could submit application to the ESMA.

³⁴³ See EMIR, Art.22 (3).

³⁴⁴ EMIR, Art.16 (1).

event of the default of one or more members.³⁴⁵ Thus, It is required that the CCPs' initial capital shall at all times be sufficient to ensure an orderly winding-down or restructuring of the activities over an appropriate time span and an adequate protection of the CCP against credit, counterparty, market, operational, legal and business risks which are not already covered by other specific financial resources.³⁴⁶ If the CCPs' own capital has been exhausted, the CCPs will bankrupt, which is out of the tolerance of the EU regulators and also the financial market.

Second, a CCP shall impose, call and collect appropriate margins to limit its risk exposures from its clearing members and, where relevant, from CCPs with which it has interoperability arrangements.³⁴⁷ Margins are considered to be the primary line of defense for CCPs, which shall consist of the initial margins and variation margins.³⁴⁸ They shall ensure that the risk exposures with all the clearing members of a CCP shall be fully collateralized, at least on a daily basis.³⁴⁹ It is required that “the margins CCP collected shall be sufficient to cover potential exposures that the CCP estimates will occur until the liquidation of the relevant positions, and they shall also be sufficient to cover losses that result from at least 99% of the exposures movements over an appropriate time horizon.” Besides, the CCP shall regularly monitor and, if necessary, revise the level of its margins to reflect current market conditions, taking into account any potentially procyclical effects. The CCP could invest the margins it collected, but shall make particular efforts to ensure adequate protection to the margins so as to guarantee that they could be completely returned to the non-defaulting clearing members in a timely manner. With regard to eligible collaterals, it is principally provided in EMIR that “a CCP shall accept highly liquid collateral with minimal

³⁴⁵ European Commission, Proposal for EMIR, COM(2010) 484 Final, p.10.

³⁴⁶ EMIR, Art.16 (2).

³⁴⁷ EMIR, Art.41 (1).

³⁴⁸ EMIR, Recite 70.

³⁴⁹ EMIR, Art.41 (1). In determining the quantity of margins a CCP shall call from its clearing members, the CCP shall adopt models and parameters in setting its margin requirements that capture the risk characteristics of the products cleared and take into account the interval between margin collections, market liquidity and the possibility of changes over the duration of the transaction. The models and parameters shall then be validated by the competent authority and subject to an opinion of the College. See EMIR, Art.41 (2).

credit and market risk.”³⁵⁰ After consulting EBA, the ESRB and the ESCB, ESMA shall develop regulatory technical standards to specify what types of collaterals could be considered eligible. Anyway, the highly liquid collateral could include cash, gold, government and high-quality corporate bonds and covered bonds.³⁵¹ By the way, when accept collaterals, the CCPs shall apply adequate haircuts to asset values that reflect the potential for their value to decline over the interval between their last revaluation and the time by which they can reasonably be assumed to be liquidated.³⁵²

Third, EMIR requests the CCPs to establish at least one “default fund.” The “default fund” will be formed by financial contributions of the clearing members of the CCPs. It is required that “the default fund shall at least enable the CCPs to withstand, under extreme but plausible market conditions,³⁵³ the default of the clearing member to which it has the largest exposures or of the second and third largest clearing members, if the sum of their exposures is larger.”³⁵⁴ The default funds will cover losses that exceed the losses to be covered by margin requirements, arising from the default, including the opening of an insolvency procedure, of one or more clearing members.³⁵⁵ Regarding the responsibility of single clearing members in establishing such default funds, EMIR provides that “the minimum size of the financial contributions to the default fund and the criteria to calculate the contributions of the single clearing members, which shall be proportionate to the exposures of each clearing member.”³⁵⁶ Actually, the establishment of default funds

³⁵⁰ EMIR, Art.46 (1). (It shall be noted that as for non-financial counterparties, the CCP could accept bank guarantees.)

³⁵¹ See EMIR, Art.46 (3).

³⁵² Ibid. (in determining the acceptable collateral and the relevant haircuts, CCPs shall take into account the liquidity risks following the default of a market participant and the concentration risk on certain assets.)

³⁵³ A CCP shall develop scenarios of extreme but plausible market conditions. The scenarios shall include the most volatile periods that have been experienced by the markets for which the CCP provides its services and a range of potential future scenarios. They shall take into account sudden sales of financial resources and rapid reductions in market liquidity. And in order to ensure consistent application, ESMA shall, in close cooperation with the ESCB and after consulting EBA, develop draft regulatory technical standards specifying the framework for defining extreme but plausible market conditions, that should be used when defining the size of the default fund and the other financial resources.

³⁵⁴ EMIR, Art.42 (3).

³⁵⁵ EMIR, Art.42 (1).

³⁵⁶ See EMIR, Art.42 (2).

enables the functions of loss-mutualisation mechanism, which will also promote diligent derivatives transactions of the clearing members.³⁵⁷

Fourth, apart from the default funds, a CCP shall also maintain a sum of sufficient pre-funded available “dedicated financial resource” to cover potential losses that exceed the losses to be covered by margin requirements and the default fund.³⁵⁸ It is required that such financial resources plus the default fund shall, at all times, enable the CCP to withstand the default of at least the two clearing members to which it has the largest exposures.³⁵⁹ Such dedicated financial resources shall be freely available and shall not be used to meet other requirement, for example the initial capital requirement.³⁶⁰

2.3.2.3 Risk absorbing “default waterfall”

After the above-discussed multi-level financial resources have been established, A Sound procedure to use these financial resources will be very important. In EMIR, A “default waterfall” rule has been designed to efficiently use these financial resources in order to better promote the stability of the CCPs. First, it is provided in EMIR that “a CCP shall use the margins posted by a defaulting clearing member prior to other financial resources in covering losses.”³⁶¹ And the CCPs shall never use the margins posted by non-defaulting clearing members to cover the losses resulting from the default of another clearing member.³⁶²

Secondly, “where the margins posted by the defaulting clearing member are not sufficient to cover the losses incurred by the CCP, the CCP shall use the default fund contribution of the defaulting member to cover the losses.”³⁶³ Hence, these two provisions aims at prevent the default of one clearing member from damaging other

³⁵⁷ See European Commission, Proposal for EMIR, COM(2010) 484 Final. p.10.

³⁵⁸ EMIR, Art.43 (1).

³⁵⁹ EMIR, Art.43 (2).

³⁶⁰ EMIR, Art.43 (2)

³⁶¹ EMIR, Art.45 (1).

³⁶² See EMIR, Art.45 (4).

³⁶³ EMIR, Art.45 (2).

clearing members' benefit, meanwhile it aims at impeding "moral hazard" of the defaulting clearing member and thus, promote their prudent transactions.

Thirdly, after the default-fund contributions of the default members having been exhausted, the CCPs' pre-funded "dedicated financial resources" shall be used.³⁶⁴ Then, if these financial resources still could not cover the losses, the CCP could use the default-fund contributions of other non-defaulting clearing members.³⁶⁵ So, the CCP shall use its own dedicated financial capital before using the contributions of the non-defaulting clearing members, in doing so, losses would be firstly assumed by the CCPs, and thus promote the CCP to prudently operate the central clearing business. Namely, the CCPs shall take more vigilant actions to control potential risks of its clearing members, such as raise the standards of collaterals for the clearing members that might be in danger.

And lastly, the CCP's own capital reserve will be exposed to further losses as the last defense line. When all these risk-prevention financial resources have been depleted, the CCP will go into bankruptcy if without emergent external capital injection from central banks or commercial banks. If this scenario really happens, the whole financial system would be endangered, and a systemic risk might breakout. Therefore, we strongly argue that a timely access to adequate liquidity resources is essential for a CCP. It is possible for such liquidity to derive from access to central bank liquidity, creditworthy and reliable commercial bank liquidity, or a combination of both.³⁶⁶ But, the EMIR did not make appropriate arrangements in relation to such external liquidity resources to CCPs.

2.2.2.4 Account segregation and portability

In order to protect the sound of the derivatives market after mandatory central clearing obligation entering into effect, the clients of clearing members that clear their

³⁶⁴ See EMIR, Art.45 (4).

³⁶⁵ EMIR, Art.45 (3).

³⁶⁶ EMIR, Recite 71.

OTC derivative contracts with CCPs should be granted a high level of protection. To this end, the intermediaries, i.e. the clearing members of CCPs, should segregate their assets from those of their clients. For this reason, CCPs should keep updated and easily identifiable records, in order to facilitate the transfer of the positions and assets of a defaulting clearing member's clients to a solvent clearing member or, as the case may be, the orderly liquidation of the clients' positions and the return of excess collateral to the clients.³⁶⁷ The requirement laid down in EMIR on the segregation and portability of clients' positions and assets should therefore prevail over any conflicting laws, regulations and administrative provisions of the Member States that prevent the parties from fulfilling them.³⁶⁸ Therefore, it is provided that "a CCP shall keep separate records and accounts that shall enable it, at any time and without delay, to distinguish in accounts with the CCP the assets and positions held for the account of one clearing member from the assets and positions held for the account of any other clearing member and from its own assets."³⁶⁹

However, the actual level of protection depends on the level of "account segregation" that those clients choose, with different costs. It is stipulated in EMIR that "a CCP shall offer to keep separate records and accounts enabling each clearing member to distinguish in accounts with the CCP the assets and positions of that clearing member from those held for the accounts of its clients."³⁷⁰ This approach is called "omnibus client segregation." Meanwhile, the CCP shall offer to keep separate records and accounts enabling each clearing member to distinguish in accounts with the CCP the assets and positions held for the account of a client from those held for the account of other clients, which is called "individual client segregation."³⁷¹ A clearing member shall offer its clients, at least, the choice between omnibus client

³⁶⁷ See EMIR, Recite 64.

³⁶⁸ See EMIR, Recite 64.

³⁶⁹ EMIR, Art.39 (1).

³⁷⁰ EMIR, Art.39 (2).

³⁷¹ EMIR, Art.39 (3). When a client opts for individual client segregation, any margin in excess of the client's requirement shall also be posted to the CCP and distinguished from the margins of other clients or clearing members and shall not be exposed to losses connected to positions recorded in another account. See EMIR, Art.39 (6).

segregation and individual client segregation and inform them of the costs and level of protection with each option, and the client shall inform its choice to the clearing member in writing.³⁷² Moreover, the clearing member shall also keep separate records and accounts that enable it to distinguish both in accounts held with the CCP and in its own account its assets and positions from the assets and positions held for the accounts of its clients at CCP.³⁷³

3. The main content of EMIR II: mandatory trading information report to trade repositories

3.1 The importance of the mandatory information report provision

As we illustrated in chapter 2, the opaqueness of the OTC derivatives market is the one of the most important reason relating to the 2008 financial crisis. OTC derivatives are complex and traded off-the-exchange, thus the trading information, like the size of risk exposure, market participants, and trading motivation etc., were not understood by the financial regulators, not even the market participants themselves.³⁷⁴ On one hand, such scarcity of transparency hindered financial market regulators from efficiently monitoring and supervising the potential risks accumulating in the financial system.³⁷⁵ On the other, the opaqueness of the OTC derivatives trading also threatened the market participants themselves. After the bankruptcy of Lehman Brothers and the bailout of AIG, all the financial market participants were worrying about their counterparties' creditworthiness because of the potential losses in

³⁷² EMIR, Art.39 (5). CCPs and clearing members shall publicly disclose the levels of protection and the costs associated with the different levels of segregation. See EMIR, Art.39 (7).

³⁷³ EMIR, Art.39 (4).

³⁷⁴ See Christoph Henkel, "Harmonizing European Union Banking Resolution: Central Clearing of OTC Derivative Contracts Maintaining the Status Quo of Safe Harbors", 22 *Transnational Law & Contemporary Problems* 81, 2013, p.87.

³⁷⁵ For example when AIG fell into liquidity crisis in September 2008, which was totally outside the vigilant view of the US financial market regulators, neither the Federal Treasury and nor the State insurance regulatory authority.

derivatives transactions. Simply speaking, due to the opaqueness of the derivatives trading, panic prevailed throughout the financial market, which directly shut down the financial market. Having seen this problem, the global financial regulators realized that raising the transparency of the OTC derivatives market shall be the first priority in relation to restore the healthy and stability of the financial market. Hence, in the Pittsburgh Summit of G-20 in September 2008, the leaders collectively declared that “all OTC derivatives contract shall be reported to trade repositories.” Then, what are trade repositories? Trade repositories are private entities equipped with a centralized electronic recording and storage system.³⁷⁶ The trade repositories will play a central role in collecting OTC derivatives trading information. And apart from this function, trade repositories could also provide other services to the financial market, such as trade confirmation, trade matching, credit event servicing, portfolio reconciliation or portfolio compression services,³⁷⁷ namely providing a string of auxiliary services that would promote the market efficiency.³⁷⁸ Till now, in order to fulfill the international commitment, the U.S. has provided the mandatory trading report obligation in its Dodd-Frank Act in 2010, and the EU also has laid down this obligation in the EMIR.

After the trading report obligation enter into force, at least several benefits would be generated. First, the trading information of the OTC derivatives market would be timely available to the financial regulators, which is essential for enhancing regulators’ competence to monitor the potential risk and intervene into this market, where necessary. Secondly, the raised transparency of the market would also benefit to most of the market participants, especially the hedging purpose “end-users”, because the market participants could more accurately evaluate the credit risk of their counterparties with transparent information, and besides, a fairer and more efficient

³⁷⁶ See BIS, “Report on OTC Derivatives Data Reporting and Aggregation Requirement,” January 2012. (In some jurisdictions, reporting to trade repositories may also be used and become mandatory with respect to data related to derivatives transactions executed on regulated markets.)

³⁷⁷ These other services that trade repositories could carry on are also confirmed by article 78 (5) of EMIR.

³⁷⁸ European Commission, Com (2009) 332 final, (However, it is the provision of trade repository services is characterized by economies of scale, which may hamper competition in this particular field. Therefore, there emerges the concern of the formation of “natural monopoly” regarding the business of restoring and providing information of derivatives contracts.)

price-formation mechanism would be formed.³⁷⁹ However, in spite of the benefits more transparency could bring. To achieve this goal, it is impractical depending merely on the voluntary disclosure of the derivatives traders, though the OTC derivatives industry has promised to increase transparency. Even though the transparency would be beneficial for the overall market, in single cases, the derivatives traders might lose interest to disclose the contracts information. They might think that, apart from the cost for disclosure, their single effort to make the market more transparency might be helpless as most of others might not disclose their contracts information. And also the counterparties of the contracts probably would not allow the disclosure. As the powerful derivatives dealers took advantage in the environment lack of fair market prices before the crisis, they may become counter-transparency strength. It is therefore that a mandatory disclosure obligation should be justified and necessary to ensure the transparency of the OTC derivatives market. As the European Commission argued, “in order to fulfill the commitment in the G20 summits of promoting the transparency of the OTC derivatives market, EU could not solely rely on the initiatives of the industry itself.”³⁸⁰

3.2 Mandatory information report provisions in EMIR

3.2.1 Scope of mandatory information report to the trade repositories

The obligation of mandatory report regarding derivatives trading information is provided in the article 9 of EMIR. It is stipulated that “the counterparties and CCPs shall ensure that the details of any derivative contract they have been concluded and of any modification or termination of the contract shall be reported to a trade repository.”³⁸¹ Be different with the mandatory central clearing provision, according

³⁷⁹ Daria S. Latysheva, “Taming the Hydra of Derivatives Regulation: Examining New Regulatory Approaches to OTC Derivatives in the United States and Europe,” 20 *Cardozo Journal of International and Comparative Law* 465, p. 472. (It is argued that “CDS protection buyers faced the same dilemma and were unable to properly assess the default risk of any of their counterparties.”)

³⁸⁰ See European Commission, Proposal for EMIR, Com (2010) 484 final.

³⁸¹ EMIR, Art.9 (1). The information could be reported to an “EU trade repository” or a “third-country

to which the clearing obligation of the financial counterparties and non-financial counterparties are differentiated. However, regarding to the trading report obligation, there is no such division. EMIR requires all the derivatives dealers, traders and CCPs should be subjected to the reporting obligation.

After the derivatives contracts being novated through the CCPs, CCPs will become the counterparties to most of the derivatives traders. Hence, most of the derivatives trading information could also be achieved from the CCPs. In spite, EMIR provided that the counterparties and CCPs shall rapidly report all the trading information.³⁸² The legislators of EMIR explained that “even though information of trades made on-exchange or cleared through a CCP can be provided to regulators directly, financial regulators need to have a complete overview of the derivatives market so as to protect against the systemic risk.³⁸³ However, in order to avoid duplicative report, EMIR also provided that “proper arrangement shall be established among the counterparties and CCPs.”³⁸⁴

As for the specific information of the derivatives contracts that shall be reported to a trade repository or where a trade repository is not available, to ESMA,³⁸⁵ ESMA shall develop regulatory technical standards (RTSs) to specify the details and types of reports regarding to different classes of derivatives. Nevertheless, the necessary information shall, at least, include the counterparties to the derivative contracts, the main characteristics of the derivative contracts, ranging from their types, underlying maturity, notional value, price, and the settlement date.³⁸⁶ The European Commission has been empowered to adopt the RTSs, when they have been developed.³⁸⁷

trade repository.” A TR established in the EU territory is called “European TR”, and a TR established in a third country which provides recording services to EU entities and recognized by the ESMA according to legal procedures is called “third-country TR”. The recognition procedure of a third-country TR is provided in art.77 of EMIR.

³⁸² In order to ensure timely and accurate recording, it is provided in Art.9 (1) of EMIR that “the details shall be reported no later than the working day following the conclusion, modification or termination of the contract.”

³⁸³ Proposal for EMIR, Com(2010) 484 final.

³⁸⁴ See Ibid. (It is stipulated that “counterparties and CCPs shall ensure that the details of their derivative contracts are reported without duplication.”)

³⁸⁵ See EMIR, Art.9 (3).

³⁸⁶ EMIR, Art.9 (5).

³⁸⁷ Ibid.

3.2.2 Trade repositories' obligation to publish the received information

Increasing the transparency of the OTC derivatives market is the overarching role of trade repositories. To achieve this objective, EMIR provides that the received trading information of OTC derivatives contracts shall be properly published to the market and reported to the regulatory authorities.

Firstly, EMIR sets up a disclose-to-market provision, which requires that “a trade repository” shall regularly, and in an easily accessible way, publish the ‘aggregate positions’ by class of derivatives on the contracts reported to it.”³⁸⁸ Namely, the information the market could get is limited, without including individual transactions, not even, the trading information of a certain derivatives trader. This means that the market participants could not know exactly their counterparties risk exposure already accumulated in derivatives trading.

Secondly, as for the information shall be “disclosed-to-the-authorities”, EMIR provides that, “the trade repositories shall collect and maintain data and shall ensure that the entities, such as ESMA, ESRB and competent regulatory authorities in the member states, have direct and immediate access to the ‘details’ of derivatives contracts they need to fulfil their respective responsibilities and mandates.”³⁸⁹ Therefore, the regulatory authorities, both at the European level and at the national level, could have direct access to the specific trading information of single derivatives contract. This provision is essential for the regulators to monitor the market abuse activities and excessive risk that has been accumulated by individual traders,

³⁸⁸ EMIR, Art.81 (1).

³⁸⁹ See EMIR, Art.81 (2) . Art.81 (3) provided in detail that “a trade repository shall make necessary information available to the following entities to enable them to fulfill their respective responsibilities and mandates: (a) ESMA; (b) the ESRB; (c) the competent authority supervising CCPs accessing the trade repository; (d) the competent authority supervising the trading venues of the reported contracts; (e) the relevant members of the ESCB; (f) the relevant authorities of a third country that has entered into an international agreement with the Union as referred to in article 75 (g) supervisory authorities appointed under Article 4 of Directive 2004/25/EC of the European Parliament and of the Council of 21 April 2004 on takeover bids; (h) the relevant Union securities and market authorities; (i) the relevant authorities of a third country that have entered into a cooperation arrangement with ESMA as referred to in Article 76; (j) the Agency for the Cooperation of Energy Regulators.”

especially, those systemically important financial institutions. In order to achieve this goal, EMIR requires that “the trade repositories shall record the derivatives information not only according to different classes, but also shall calculate and maintain the trading information based on single entities.”³⁹⁰

3.2.3 Trade repositories’ obligation of prudential operation

As claimed by the European Commission that, “after mandatory trade reporting obligation entering into force, the trade repositories would be the trading information center, and those information received and maintained by trade repositories would be essential for regulator, policy makers and also for the market participants.” Hence, it is extremely important to ensure the information maintained by the trade repositories is safe and accurate. To achieve this goal, EMIR shall set down rules to make sure that the trade repositories will be soundly regulated so as to ensure that they are operated in a safe, sound and efficient way.³⁹¹

Firstly, the European Commission holds that ESMA should be responsible authority to authorize and supervise the EU trade repositories given that once they are registered, they will provide services across the European Union.³⁹² Therefore, in EMIR, it is provided that a legal person wants to operate trading information recording business for OTC derivatives in the EU shall firstly submit an application to the ESMA for authorization. In order to be registered, a trade repository shall be a legal person established in the EU territory and meet other prudential operation requirements laid down in EMIR.

Secondly, in order to make sure that the information, maintained by trade repositories, is reliable, secured and protected, trade repositories will be subjected to a set of organizational and operational requirements.³⁹³ In terms of organizational requirements, EMIR generally provided that, “trade repositories to set down a clear

³⁹⁰ See EMIR, Art.80 (4).

³⁹¹ COM., 2009, 563

³⁹² COM., 2009, 563

³⁹³ See Proposal for EMIR, COM(2010) 484 Final.

organizational structure with well defined, transparent and consistent lines of responsibility and adequate internal control mechanism, including sound administrative and accounting procedures, which prevent any disclosure of confidential information.”³⁹⁴ In this regard, EMIR also provides that “a trade repository shall maintain and operate an adequate organizational structure to ensure continuity and orderly functioning of the trade repository in the performance of its services and activities. It shall employ appropriate and proportionate systems, resources and procedures.”³⁹⁵ It is notable that “where a trade repository offers ancillary services such as trade confirmation, trade matching, credit event servicing, portfolio reconciliation or portfolio compression services, the trade repositories shall maintain those ancillary services operationally separated from the trade repositories’ function of centrally collection and maintaining records of derivatives.”³⁹⁶ As regards to operational requirements, a trade repository, in general, shall identify sources of operational risk and minimize them through the development of appropriate systems, controls and procedures. Such system shall be reliable and secure and have adequate capacity to handle the information received.³⁹⁷ It is especially important that a trade repository shall “establish, implement and maintain an adequate ‘business continuity policy’ and ‘disasters recovery plan’ aiming at ensuring the maintenance of its functions, the timely recovery of operations and the fulfilment of the trade repositories’ obligations, and such a plan shall at least provide for the establishment of backup facilities.”³⁹⁸ Besides, where a trade repository has been withdrawn the registration, it shall ensure orderly substitution, including the transfer of data to other trade repositories and the re-direction of reporting information flows to other qualified trade repositories.³⁹⁹

Thirdly, in order to reinforce the trading data safeguarding, EMIR principally

³⁹⁴ EMIR, Art. 78 (1).

³⁹⁵ EMIR, Art.78 (4).

³⁹⁶ EMIR, Art 78 (5).

³⁹⁷ EMIR, Art.79 (1).

³⁹⁸ EMIR, Art.79 (2).

³⁹⁹ See EMIR, Art.79 (3).

provided that, “a trade repository shall ensure the confidentiality, integrity and protection of the information received.”⁴⁰⁰ More specific, “a trade repository may only use the data it receives for commercial purposes if the relevant counterparties have provided their consent.”⁴⁰¹ And “a trade repository shall maintain and operate effective written organizational and administrative arrangements to identify and manage any potential conflicts of interest concerning its managers, employees, or any person directly or indirectly linked to them by close links.”⁴⁰² In this regard, “a natural person who has a close link with a trade repository or a legal person that has a parent undertaking or a subsidiary relationship with the trade repository shall not use confidential information recorded in a trade repository for commercial purpose.”⁴⁰³ Moreover, a trade repository shall promptly record the information it has received and shall maintain it for at least 10 years following the termination of the relevant contracts.⁴⁰⁴ The information shall be calculated by class of derivatives and by reporting entity based on the details of the derivative contracts reported in accordance with article 9. And “a trade repository shall allow the parties to a contract to access and correct the information on that contract in a timely manner.”⁴⁰⁵

4. Main content of EMIR III: increase risk-prevention requirement for non-central clearing derivatives

Although Central Clearing is an efficient way to prevent counterparty risk, not all the OTC derivatives are suitable and eligible for central clearing. To keep the stability of CCPs, CCPs could only accept those standardized and liquid contracts as the risk of which could be more easily calculated and controlled. Unreasonably request CCPs to handle those contracts they could not appropriately control the risk would be detrimental also to the stability of the whole financial system. As provided in Article 5

⁴⁰⁰ EMIR, Art.80 (1).

⁴⁰¹ EMIR, Art.80 (2).

⁴⁰² EMIR, Art.78 (2).

⁴⁰³ EMIR, Art.80 (6).

⁴⁰⁴ EMIR, Art.80 (3).

⁴⁰⁵ EMIR, Art.80 (5).

of EMIR that “ESMA shall, after conducting a public consultation and after consulting the ESRB and, where appropriate, the competent authorities of third countries, develop and submit to the Commission for endorsement draft regulatory technical standards (RTSs), specifying the class of OTC derivatives that should be subject to the clearing obligation.”⁴⁰⁶ “With the overarching aim of reducing systemic risk, the RTSs shall take into consideration the following criteria: (a) the degree of standardization of the contractual terms and operational processes of the relevant class of OTC derivatives; (b) the volume and liquidity of the relevant class of OTC derivatives; (c) the availability of fair, reliable and generally accepted pricing information in the relevant class of OTC derivatives.”⁴⁰⁷

Therefore, even after the entering into force of EMIR, there would still remain lots of OTC derivatives that will not be centrally cleared. However, compared with those centrally cleared contracts, the counterparties of non-centrally derivatives should manage the counterparty risk themselves. If such risks not be soundly regulated, these non-centrally cleared derivatives trading might pose risk to the whole financial system. Thus, the EMIR also provided rules specially aiming at raising the risk-prevention requirements regarding to the non-CCP clearing derivatives. However, on the other hand, the legislators of EMIR also agreed that highly customized derivatives contracts play an important role in transferring particular risks, and usually do not involved into the speculative transactions. Therefore the new regulations also shall not unreasonably increase the cost of trading non-centrally cleared derivatives. In fact, the balance between safety and efficiency always exists in the regulation to the financial market. But, considering that although the financial system locates in the center of the economy, but compared with real economy, the contribution of the financial sector is very low, thus the priority in regulating the financial market is to maintain its stability.

In principle, EMIR provides that, “financial counterparties and non-financial counterparties that enter into an OTC derivative contract not cleared by a CCP, shall

⁴⁰⁶ EMIR, Art.5 (2).

⁴⁰⁷ EMIR, Art.5 (4).

ensure, exercising due diligence, that appropriate procedures and arrangements are in place to measure, monitor and mitigate operational risk and counterparty credit risk.”⁴⁰⁸ Meanwhile, EMIR also stipulates several concrete requirements.

First, EMIR requires that, “the counterparties enter into the non-centrally cleared OTC derivatives contracts shall, where available, timely confirmed the terms of the relevant contracts by electronic means.”⁴⁰⁹ The electronic confirmation requirement aims at promoting trading efficiency.

Second, in order to prevent potential disputes between counterparties, EMIR requires that “a formalized process to reconcile portfolios shall be in place so as to manage the associated risk and to identify disputes between parties early and resolve them.”⁴¹⁰

Third, the risk exposure against the counterparties shall be timely calculated. In this regard, EMIR provides that, “the financial counterparties and non-financial counterparties shall “mark-to-market” the value of outstanding contracts on a daily basis.”⁴¹¹ “When the market conditions do not allow mark-to-market calculation, the counterparties shall ensure there exists a reliable and prudent “marking-to-model” approach be employed.”⁴¹² In doing so, potential risk could be timely understood by the contract parties.

Fourth, be different with CCP clearing, the counterparties of non-centrally cleared derivatives contracts shall manage the collaterals exchange themselves. Before the crisis, the derivatives transactions of main financial institutions were all not adequately collateralized. In light of this lesson, EMIR stipulated that, “financial counterparties shall have risk-management procedures that require the timely, accurate and appropriately segregated exchange of collateral with respect to OTC derivative contracts. Non-financial counterparties shall have risk-management procedures that require the timely, accurate and appropriately segregated exchange of

⁴⁰⁸ EMIR, Art.11 (1).

⁴⁰⁹ See EMIR, Art.11 (1) (a).

⁴¹⁰ See EMIR, Art.11 (1) (b).

⁴¹¹ See EMIR, Art.11 (2).

⁴¹² Ibid..

collateral with respect to OTC derivatives contracts that are entered into on or after the clearing threshold is exceeded.”⁴¹³

Fifth, the financial regulators also learned the lesson that the financial institutions were badly capitalized in respect to derivatives trading, given that derivatives transactions per se are more risky with higher leverage ratio. Therefore, raising the financial institutions’ own capital reserve became a consensus among the international financial regulators. In fact, the G-20 leaders have collectively declared, in the 2009 Pittsburgh Summit, that “we committed to act together to raise capital standards, to improve the OTC derivatives market and to create more powerful tools to hold large global firms to account for the risks they take.”⁴¹⁴ In response to this commitment, EMIR also provided that, “financial counterparties shall hold an appropriate and proportionate amount of capital to manage the risk not covered by appropriate exchange of collateral.”⁴¹⁵ The EU regulators also believe that higher capital requirement would reflect higher risk in these contracts, and thus this requirement would also drive more OTC derivatives into CCP clearing.⁴¹⁶ It is notable that the non-financial counterparties are not mentioned in this requirement. As this article is very principle, concrete capital standards provisions will be provided in the European Union’s Capital Requirement Directive (CRD IV). We will analyze the CRD IV in the next chapter.

Till now, we have thoroughly discussed the approaches in EMIR to regulate the OTC derivatives market so as to prevent a next crisis. In light of the lessons we have learned from the crisis, the financial regulators clearly realized that systemic risk could be resulted from the risky derivatives transactions. Therefore, in order to impede the happen of systemic risk, EMIR mainly focused on two methods, one is the mandatory requirement of central clearing, which aims at cut down contagion links between the private financial institutions; the other is the mandatory trade reporting

⁴¹³ EMIR, Art.11 (3).

⁴¹⁴ EMIR, Art.11 (4).

⁴¹⁵ EMIR, Art.11 (4).

⁴¹⁶ European Commission, Com (2009) 563 final.

requirement, which aims at significantly raise the transparency of this market. The European based CCPs and trade repositories has been gradually authorized and established in EU after the EMIR entering into effect on 16 August 2012, which would form the new European market infrastructure for EU OTC derivatives trading. However, could we believe that the regulatory approaches laid down by the EMIR could sufficiently inhibit a next crisis from the OTC derivatives market? In other words, could they impede systemic risk because of OTC derivatives transactions? We will question about the drawbacks of the EMIR below so as to identify potential problems still shall be considered by the policy-makers and regulators.

5. Potential drawbacks of the EMIR regulatory approaches

The mandatory CCP clearing and trading report obligations in EMIR are fully in line with EU's commitment in G-20 Summits. We consider that these approaches are not the traditional regulatory methods that reinforce financial regulators' intervening power and limit the risky transactions. The legislators of EMIR intend to construct a new derivatives trading infrastructure and raise the transparency of this opaque market. The mandatory trading information requirement could significantly raise the transparency of this market, which will be beneficial for the regulators and all the market participants. But, regarding to the CCP clearing approach laid down in EU, could it successfully impede systemic risk due to the derivatives trading? We have several dubious arguments.

Firstly, after the EMIR entered into force, most of qualified OTC derivatives will be novated through a European based CCP, or an accepted CCP of the third counties. Till February 2015, there have been 16 CCPs have been authorized by the competent authorizes of the EU member states (See the table below). Thus, these CCPs will become the counterparties of all the European derivatives traders. Namely, the defaulting risk of the traders will be concentrated on the CCPs at the same time. But due to several reasons, the risk will be continually concentrated on these CCPs, which might be overburdened for them, even the EMIR has laid down prudential operational

rules for the CCPs. First, as we argued in Part II, the bankruptcy law favored the OTC derivatives trading, in which the derivatives transactions are exempted from the pro-debtor bankruptcy law rules. Therefore, the incentive for trading derivatives, instead of normal financial contracts, like traditional loans, still exists. The new regulations did not directly inhibit speculative derivatives transactions. Namely, these speculative transactions would still be valid, even with raised costs. Second, the CCPs would become the systemically important institutions. Thus the counterparties and also the CCPs per se would think that even bankruptcy risk happens, the government will bail them out as they are “too-big-to-fail” and “too-interconnected-to-fail.” Hence a “moral hazard” would be resulted in, namely the counterparties of the CCPs will take no account into the creditworthiness of the CCPs and concentrate their transactions on single CCPs. The CCPs would also be badly managed, given that they could decline their prudential operation standards in order to attract more transactions be centrally cleared through them. And there would be competition between these CCPs.

Secondly, the peculiarity of CDSs clearing could potentially stumbled the CCPs. Clearinghouse proponents reason that sophisticated CCP risk management techniques adequately protect against systemic shocks, mitigating concerns and rendering CCP failure unlikely. However, even though CCPs have performed reasonably well for some derivatives, there is little reason to believe they are equally safe for clearing CDSs. In fact, due to meaningful differences between CDSs and other derivatives, CCPs that clear CDSs may be significantly riskier than traditional clearinghouses. Specifically, the “jump-to-default risk” is likely to increase systemic risk for CDS CCPs.⁴¹⁷ Recall that jump-to-default risk is the danger that a reference entity experiences a credit event suddenly, necessitating immediate payments from potentially illiquid counterparties. This possibility of sudden increase in CDS premiums confounds risk management practices for CCPs that clear CDSs to demand

⁴¹⁷ Jeremy C. Kress, “Credit default swaps, clearinghouses, and systemic risk: why centralized counterparties must have access to central bank liquidity,” 48 *Harvard Journal on Legislation* 49, 2011, p. 75.

margins or collateral that varies smoothly with the risk of the loans insured.⁴¹⁸ Conceptually, jump-to-default risk can never be fully covered without requiring clearing members to collateralize any large net sales of protection completely. The only way to eliminate counterparty risk for bilaterally traded OTC derivatives would be through 100% collateralization. However, full collateralization would require too much capital, rendering CDS trading un-economic.⁴¹⁹

Imagine, for instance, that all of AIG's credit derivatives positions had been cleared through a CCP. The CCP's default fund likely would have been insufficient to satisfy obligations on AIG's 440 billion CDS portfolio.⁴²⁰ Without recourse to the default fund, CCP members – many of whom were likely experiencing their own liquidity or solvency crises – would have had to absorb the losses. In contrast to a bilateral market, wherein only AIG's counterparties would have experienced direct losses, all clearing members would have felt the systemic impact of AIG's default and the CCP's insolvency. Thus, centralizing jump-to-default risk in a clearinghouse might exacerbate the systemic problem.

⁴¹⁸ Ibid.

⁴¹⁹ See CME Group: "Review of CME Group's Credit Default Swap Margin Model and Financial Safeguards for CDS Clearing," 18 April 2009, available at https://www.cmegroup.com/company/files/Review_of_CME_Group_CDS_Margin_Model_and_Financial_Safeguards.pdf, last visited 9 March 2015. (Catastrophic 'jump to default' by reference entities underlying single-name CDSs may precipitate margin coverage shortfalls on portfolios with highly concentrated exposures to the defaulting reference names.") Further, some market commentators have noted that legislative proposals requiring centralized clearing of illiquid CDSs might exacerbate the volatility of margining given the difficulty of marking-to-market in the absence of robust price discovery.

⁴²⁰ Craig Pirrong, "The Clearinghouse Cure, Regulation," Winter 2008-09, p.49 ("An AIG default would have imposed huge losses on the clearinghouse, and hence on its members – other big financial intermediaries. Such a large default would have threatened the viability of the clearinghouse and its members...").

Chart 9: list of CCPs that have been authorized to offer services and activities in the Union (last updated 25 February 2015)

	Name of the CCP	Country	Competent authority	Date of authorisation
1	Nasdaq OMX Clearing AB	Sweden	Finansinspektionen	18 March 2014
2	European Central counterparty	Netherla	De Nederlandsche	1 April 2014
3	KDPW-CCP	Poland	Komisja Nadzoru	8 April 2014
4	Eurex Clearing AG	Germany	Budesanstalt fur	10 April 2014
5	Cassa di Compensazione e	Italy	Banca d'Italia	20 May 2014
6	LCH.Clearing AG	France	Autorite de Controle	22 May 2014
7	European Commodity Clearing	Germany	Bafin	11 June 2014
8	LCH.Clearnet. Ltd	UK	Bank of England	12 June 2014
9	Keler CCP	Hungary	Central Bank of	4 July 2014
1	CME Clearing Europe Ltd	UK	Bank of England	4 August 2014
1	CCP Austria (CCPA)	Austria	Austrian Financial	14 August 2014
1	LME Clear Ltd	UK	Bank of England	3 September 2014
1	BME Clearing	Spain	Comision Nacional del	16 September 2014
1	OMIClear – C.C.,S.A.	Portugal	Commissao do	31 October 2014
1	Holland Clearing House B.V.	Netherla	De Nederlandsche	12 December 2014
1	Athens Exchange Clearing	Greece	Hellenic Capital	22 January 2015

Source: Website of ESMA

6. Conclusion

In this chapter, we focused ourselves on analyze the EU's regulation on "OTC derivatives, central counterparties and trade repositories," also shortly named as EMIR (European Market Infrastructure Regulation). Before analyzing concrete rules

of EMIR, we firstly discussed the background of the drafting of EMIR, specifically we have talked about the international regulatory reform against the OTC derivatives market after the crisis, and we argued that EU's regulatory efforts shall be in line with the internationally coordinated regulatory actions, without which a single jurisdiction's regulatory effort regarding the derivatives market would be greatly dampened. In fact, after completely reviewed the EMIR, we consider that EU's regulatory approaches toward the OTC derivatives market are fully consistent with its international commitments. We also introduced the regulatory and supervisory architecture reform in the EU. Before the crisis, EU's regulatory and supervisory structure was based on the "Lamfalussy four-level" design, under which there was no strong regulatory and supervisory power at the EU level. In light of the borderless nature of derivatives trading, after the crisis the EU has greatly raised regulatory power of the EU level authorities. A new European System of Financial Supervision (ESFS) was set up. Now, ESMA is the organ responsible for regulating the derivatives market, which has the power to develop concrete supervisory standards as to the CCPs and ESMA directly supervise the EU based trade repositories.

The EMIR has entered into force on 16 August 2012. We argued that under the EMIR a new trading structure of the OTC derivatives market will be formed. The EMIR regulatory approaches are different with traditional regulatory ones, given that EMIR entrusts the regulators less "direct intervene power" in relation to the private transactions, but emphasizes on establishing a new market transaction infrastructure for derivatives trading. In sum, there are two main approaches that have been laid down in EMIR in relation to the regulation of the OTC derivatives market. One is the central clearing obligation. Under this provision, the financial counterparties and the non-financial counterparties with the derivatives trading volume beyond the "clearing threshold" shall novated their derivatives contracts in qualified CCPs and cleared through the CCPs. We agree with the EMIR legislators that the CCP clearing requirement could reduce systemic risk in the sense that the original high-interconnected derivatives market could be unlocked, and hence a "domino

effect” or the “contagion risk” when one main derivatives trader default would spread across the financial system could be prevented. But, as the CCPs will become the counterparties of every derivatives traders, risks will be correspondingly concentrated on CCPs. Thus, CCPs shall be strictly regulated. In this regard we also elaborated the detailed provisions in EMIR, such as the authorization, the prudential operation rules. The second approach of EMIR is the provision of mandatory trading report obligation. Namely, all the derivatives transactions shall be timely reported to a qualified trade repository. As manifested in the 2008 crisis, the opaqueness of the derivatives trading is the main reason of the escalation of the crisis. This provision could greatly increase the transparency of the OTC derivatives market, which is essential to maintain the integrity and stability of this market. The EMIR also noticed that not all OTC derivatives contracts would be suitable for central clearing, thus, some provisions to reinforce the risk-management of those non-centrally cleared derivatives contracts were also laid down in this regulation.

At last, we questioned the effectiveness of the CCP clearing approach of EMIR in preventing systemic risk. Particularly, we advanced the concern about the concentration of risk in CCPs, which might exceed CCPs’ ability to assume. In the current legal environment, there are several incentives for derivatives traders to novated their contracts in CCPs but without caring about the creditworthiness of the CCPs. Moreover, the prudential rules laid down by the EMIR could also not function, given that the competition between CCPs would result in loosening the standards of central clearing. And the “jump-to-default” risk of CDSs clearing might directly push down a CCP, the margins and the default funds would not absorb the losses of even one clearing member’s default, for example a trader like AIG. Anyway, the effectiveness of the CCPs clearing will be further examined, and the concrete provisions shall be gradually refined according to the practice.

As we have proposed above, after the crisis, EU has been carrying on a comprehensive regulatory reform. EMIR is the regulation that specifically regulates the OTC derivatives market. However, there are some other newly enacted EU laws

related with the regulation to the OTC derivatives market, which would complement with the EMIR. In order to have a complete analyze to the European Union's regulatory reform against the derivatives market, we are going to examine these laws one by one the next chapter.

Chapter 7 EU's Regulatory Reform II: Reinforce Traditional Regulatory Approaches

In chapter 6, we have analyzed the regulatory approaches against the OTC derivatives market provided in the EMIR, namely the CCP clearing and the trade information reporting. These rules in EMIR will construct a new transaction market infrastructure, which is considered by the EU as the main approach to prevent potential systemic risk due to the derivatives market. But, apart from the new market infrastructure, the regulators need other regulatory measures to impede illegitimate derivatives transactions, such as market abuse transactions. Hence, the EU also enacted or updated several other laws to deal with specific perverse derivatives trading. These specific laws will complement the EMIR, forming a comprehensive regulation network to the risky OTC derivatives market. In the remainder, we are going to analyze the relevant legal rules in these specific laws one by one.

1. European Market in Financial Instrument Regulation and OTC derivatives

The EC's investment-services regime experienced a seismic shift with the adoption of the 2004 Markets in Financial Instruments Directive (MiFID).⁴²¹ The MiFID is the leviathan of the Financial Service Action Plan (FSAP),⁴²² which aims at improving the competitiveness of the financial markets by creating a single market for investment services and activities in the European Community.⁴²³ MiFID replaced the

⁴²¹ See Niamh Moloney, *EC Securities Regulation* (second edition), Oxford EC Law Library, 2008, p.356.

⁴²² *Ibid*, p.356. FSAP is EC's financial service action plan in 1999, which sets out a programme of 42 measures that would radically change the shape of EC financial services and securities regulation. It was as significant for the single market in investment services and securities as the 1992 programme for the single market generally. See Moloney, p.18.

⁴²³ See the introduction of MiFID I, available at <http://ec.europa.eu/finance/securities/isd/MiFID/index_en.htm>

prior Investment Service Directive (ISD) and fundamentally reforms and regulates almost all aspects of the investment-services industry, providing the comprehensive regulatory regime regarding the regulation towards financial investment services provided by banks and investment firms in the Union.⁴²⁴ In particular, MiFID governs the activities of traditional stock exchanges and alternative trading venues.⁴²⁵

While MiFID created competition between these services and brought more choices and lower prices for investors all over the EU, shortcomings of the legal system laid down by MiFID were also clearly exposed in the 2008 financial crisis. Therefore, the revision of MIFID constitutes an integral part of the reforms aimed at establishing a safer, sounder, more transparent and more responsible financial system, as well as ensure a more integrated, efficient and competitive EU financial market.⁴²⁶ From 2011 the European Commission has advanced the MiFID revision proposal. But, the European parliament and the European Council enacted the revision until 15 May 2014. The revision of the MiFID consists of two parts, namely a Regulation (MiFIR)⁴²⁷ and a Directive (MiFID II).⁴²⁸ While the MiFIR shall be directly applicable to the member states, the MiFIR would be transposed to national laws that will be applicable starting January 2017. To the end of our research, the most important provision might be the “mandatory trading obligation” for OTC derivatives provided in the MiFIR.⁴²⁹

⁴²⁴ It has been described as a ‘sprawling directive with far-reaching implications for any firm involved in buying and selling securities in Europe’: Editorial, Financial Times, 23 August 2005, 14.

⁴²⁵ See the regulatory ambit of MiFID, available at http://ec.europa.eu/finance/securities/isd/index_en.htm

⁴²⁶ European Commission, “Proposal of for a Regulation of the European Parliament and of the Council on markets in financial instruments and amending regulation EMIR on OTC derivatives, central counterparties and trade repositories,” (Proposal for MIFIR, hereinafter), COM (2011) 652 final.

⁴²⁷ MiFIR mainly sets out requirements in relation to the disclosure of trade transparency data, and removing barriers to non-discriminatory access to clearing facilities. See Proposal of MIFIR.

⁴²⁸ The MIFID II, amends specific requirements regarding the provision of investment services, the scope of exemptions from the MIFID I, organizational and conduct of business requirements for investment firms, organizational requirements for trading venues, the authorization and ongoing obligations applicable to providers of data services, power available to competent authorities, sanctions, and rules applicable to third-country firms operating via a branch. See Proposal of MIFIR.

⁴²⁹ European Commission, Proposal for MIFIR, COM (2011) 652 final.

1.1 Mandatory trading on regulated venues

As part of the significant efforts underway to improve the stability, transparency and oversight of OTC derivatives markets, the G-20 has agreed that trading in standardized OTC derivatives should move to exchanges or electronic trading platforms.⁴³⁰ In order to fulfill this commitment and to be consistent with the central clearing requirement in EMIR, the revision of MIFID aims at requiring trading in qualified OTC derivatives only on eligible platforms, i.e. the regulated markets, MTFs or OTFs. While the regulated markets (RMs) and the Multilateral Trading Facilities (MTFs) are regulated trading venues provided in the MIFID I since 2004, the Organized Trading Facilities (OTFs) is a newly created type of trading venue by the MIFIR. OTF is an electronic trading system operated by an investment firm or a market operator, in which multiple third party buying and selling interests in financial instruments are able to interact in the system. As argued, “there is not a clear scope of OTFs, but they could encompass a wide range of organized trading venues for non-equity instruments, such as broker crossing systems and some derivatives trading systems that have not been caught as RMs or MTFs.” Some OTC derivatives trading facilities could be included into OTFs, and thus be regulated by MIFIR.

Generally speaking, this “trading obligation” will be imposed on both financial and non-financial counterparties exceeding the “clearing threshold” as provided in EMIR. It is required in MIFIR that financial counterparties⁴³¹ and non-financial counterparties that become subject to the clearing obligation, namely the rolling average position over 30 working days exceeds the clearing threshold,⁴³² shall conclude transactions with other financial counterparties or non-financial counterparties subject to centrally-clearing obligation, only on regulated markets, MTFs, OTFs or recognized third country trading venues, if that class of derivatives contracts has been declared subject to the trading obligation as laid down in

⁴³⁰ See G20 Leaders statement of Pittsburgh Summit, available at <http://www.g20.utoronto.ca/2009/2009communique0925.html>

⁴³¹ The scope of financial counterparties is the same as defined in Art.2 (8) of EMIR.

⁴³² See EMIR, Art.10 (1)(b).

MiFIR.⁴³³ And regarding to the classes of derivatives subject to mandatory “trading obligation”, ESMA has been empowered to develop draft regulatory technical standards, specifying the classes of derivatives declared subject to the clearing obligation shall be traded on the venues and the date or dates from which the trading obligation takes effect.⁴³⁴ In developing the regulatory technical standards, ESMA is required to take into consideration of the liquidity of the relevant type of derivatives. In other words, ESMA needs to consider the average frequency and size of trades over a range of market conditions, the number and type of market participants, and also the average size of the spreads.⁴³⁵ Lastly, ESMA shall take into consideration the anticipated impact that trading obligation might have on the liquidity of a class of derivatives or a relevant subset thereof and the commercial activities of end users which are not financial entities.⁴³⁶

Moreover, the “trading obligation” shall also apply to third country entities that would be subject to the clearing obligation if they were established in the Union, which enter into derivatives transactions pertaining to a class of derivatives that has been declared subject to the trading obligations, provided that the contract has a direct, substantial and foreseeable effect within the European Union, or where such obligation is necessary or appropriate to prevent the evasion of any provision of the trading obligation of MiFIR. In order to promote timely centrally-clearing, the operator of a “regulated market” shall ensure that all transactions in derivatives that are concluded on that regulated market are cleared by a CCP.⁴³⁷ The CCPs, trading venues and investment firms which act as clearing members of CCPs, shall have in place effective systems, procedures and arrangements in relation to cleared derivatives to ensure that transactions in “cleared derivatives,” including mandatory clearing

⁴³³ MiFIR, Art. 28 (1).

⁴³⁴ MiFIR, Art.32 (1).

⁴³⁵ MiFIR, Art.32 (3).

⁴³⁶ Ibid. There are two main factors determining whether or not a class of derivatives subject to the clearing obligation should also be made subject to the trading obligation: the venue test, the class of derivatives must be admitted to trading or traded on at least one admissible trading venue; and the liquidity test: whether the derivatives are “sufficiently liquid” and there is sufficient third-party buying and selling interest. See FSA REPORT

⁴³⁷ MiFIR, Art.29 (1).

derivatives or voluntary clearing derivatives,⁴³⁸ are submitted and accepted for clearing as quickly as technologically practicable using automated systems.⁴³⁹ “Indirect clearing” is also acceptable, arrangements with regard to exchange-traded derivatives are permissible provided that those arrangements do not increase counterparty risk and ensure that the assets and positions of the counterparty benefit from protection with equivalent effect to that required in EMIR.⁴⁴⁰

In order for the trading obligation to take effect, the relevant classes of derivatives must be admitted to trading or traded on at least one trading venue, and there must be sufficient third-party buying and selling interest in the class of derivatives or a relevant subset thereof so that such a class of derivatives is considered sufficiently liquid to trade only on the qualified venues.⁴⁴¹ It is argued that the “trading on regulated venues obligation” would facilitate standardization of the OTC derivatives contracts and thus promote the CCP clearing. Secondly, the “trading obligation” will increase the trading transparency, especially giving the supervisors a whole view of the trading of OTC derivatives. Thirdly, the trading obligation would reduce operational risk through automated procedures.

1.2 Pre and post trading data publication by trading venues

MIFIR I introduced the pre-trade and post-trade transparency requirements for shares and equity-based financial instruments, which is deemed as inadequate to cope with the potential risks resulted from the market of other financial instruments, especially the derivatives. The 2008 crisis has reflected the weaknesses of the transparency regime. Hence, MIFID II extends the pre and post trade transparency requirements for trade venues in relation to non-equity financial instruments, inter alia, including OTC derivatives transactions.⁴⁴²

⁴³⁸ MIFIR, Art.29 (2).

⁴³⁹ Ibid.

⁴⁴⁰ MIFIR, Art.30.

⁴⁴¹ MIFIR, Art.32 (2).

⁴⁴² See MIFIR, Recite 16.

1.2.1 Pre-trade transparency requirement

It is provided in Article 8 of MIFIR that, “market operators and investment firms operating a trading venue shall make public current ‘bid and offer’ prices and the depth of trading interests at those prices which are advertised through their systems for bonds, structured finance products, emission allowances and derivatives on that trading venue.”⁴⁴³ The operators of the trading venues shall make that information available to the public on a continuous basis during normal trading hours.⁴⁴⁴ However, it is also notable that the publication obligation does not apply to those derivative transactions of non-financial counterparties which are objectively measurable as reducing risks directly relating to the commercial activity.⁴⁴⁵ It shall be mentionable that competent authorities of member states have been given the power to waive the obligation for operators of the trading venues in regarding to the publication obligation.⁴⁴⁶

1.2.2 Post-trade transparency requirement

Likewise, the MIFID II also extended post-trade publication obligation regarding the non-equity instruments, such as derivatives. It is provided in MiFIR that “market

⁴⁴³ MIFIR, Art.8 (1).

⁴⁴⁴ Ibid.

⁴⁴⁵ Ibid.

⁴⁴⁶ MIFIR, Art.9 (1). (regarding to the non-equity financial instruments that could be waived from the pre-trade obligation, competent shall take into considerations: a)orders that are large in scale compared with normal market size and orders held in an order management facility of the trading venues pending disclosure; b)actionable indications of interest in request– for-quote and voice trading system that are above a size specific to the financial instrument, which would expose liquidity providers to undue risk and takes into account whether the relevant market participants are retail or wholesale investors; c)derivatives which are not subject to the trading obligation and other financial instruments for which there is not a liquid market.) However, before granting a waiver, competent authorities shall notify ESMA and other competent authorities of the intended use of each individual waiver and provide an explanation regarding their functioning. And the notification of the intention shall be made not less than four months before the waiver is intended to take effect. The competent authorities of member states could also withdraw a waiver, either on their own initiative or upon request by other competent authorities, if they find that the waiver is being used in a way that deviates from its original purpose or if they consider that the waiver is being used to circumvent the requirements of pre-trade publication laid down by MIFIR II. Furthermore, the competent authority responsible for supervising the trading venues, on which a class of derivatives and other non-equity financial instruments traded, may temporarily suspend the obligation of pre-trade publication obligation if that class of derivatives falls below a specified threshold.

operators and investment firms operating a trading venue shall make public the price, volume and time of the transactions executed in respect of derivatives that are traded on a trading venue.”⁴⁴⁷ The operators of the trading venues shall make details of all such transactions public as close to real-time as is technically possible.⁴⁴⁸

Furthermore, the post-trade disclosure obligations also attributed to investment firms, including the systematic internalisers (SIs). It is provided that “investment firms which, either on own account or on behalf of clients, conclude transactions in bonds, structured finance products, emission allowances, and derivatives traded on a trading venue shall make public the volume and price of those transactions and the time at which they were concluded, that information shall be made public through an approved publication arrangement.”⁴⁴⁹ It is therefore that after the MIFID II, the transparency requirements will cover also derivatives eligible for clearing or traded on RMs, MTFs, and OTFs.

2. European Capital Requirement Regulation and OTC derivatives

In the 2008 crisis, another problem exposed is that the banks generally did not have strong own fund to withstand the losses. Therefore, the global regulators realized the current capital requirements for the banking industry under the Basel regime was not sufficient to maintain the stability of the banks. In the G-20 summit, the leaders also declared that “non-centrally cleared derivatives shall subject to higher capital requirements in order to properly reflect the higher risks associated with them.”

⁴⁴⁷ See MIFIR, Art.10 (1).

⁴⁴⁸ Ibid.

⁴⁴⁹ MIFIR, Art.21 (1). (APA, namely means an approved publication arrangement as defined in article 4(1)(52) of Directive 2014/65/EU.) The competent authorities of Member States have the right to authorize investment firms to provide for deferred publication, or may request the publication of limited details of a transaction or details of several transactions in an aggregated form, or a combination thereof, during the time period of the deferral or may allow the omission of the publication of the volume for individual transactions during an extended time period of deferral, or in the case of non-equity financial instruments that are not sovereign debt, may allow the publication of several transactions in an aggregated form during an extended time period of deferral, or for an indefinite period of time, and may temporarily suspend the obligations. MIFIR, Art.21 (4).

Following the G20 leaders' call, the Basel Committee on Banking Supervision (BCBS) started to review the existed regulatory capital regime. The BCBS identified that the treatment to counterparty credit risk in the current Basel II was insufficient, which shall be substantially revised. The new regime in Basel III strengthened the capital requirements for counterparty credit exposures arising from derivatives trading, repo and securities financing activities.

To transpose the Basel III into EU law, the European Commission began to revise its Capital Requirement Directive (CRD) regime, setting new prudential requirements for European banks (including credit institutions and investment firms). In the legislative framework of the EU, the CRD IV forms an integral part of EU's comprehensive financial regulatory reform agenda. Particularly, it complements the specific regulation on OTC derivatives, i.e. EMIR, in regards of promoting a more stringent regime for derivatives that will remain over-the-counter traded, and thus incentivize banks entering into CCP clearing. The CRD IV consists of two instruments, namely a Directive governing the access to deposit-taking activities and a Regulation (CRR), establishing the prudential requirements institutions need to obey with. In order to avoid national divergences, a Regulation is justified as the CRR will be directly applicable to all the EU member states.⁴⁵⁰ As regards our research in OTC derivatives, we will focus only on the CRR, which stipulates new capital requirements as to OTC derivatives.

2.1 Increase own fund requirement as to Credit Valuation

Adjustment risk

In fact, the Basel II regulatory capital regime had already addressed the risk of counterparty default in derivatives transactions, but it did not address the Credit

⁴⁵⁰ Parts of the current CRD, where the degree of prescription is lower and where the links with national administrative laws are particular important, will stay in the form of a directive. This concerns in particular the powers and responsibilities of national authorities, i.e. authorization, supervision, capital buffers and sanctions; the requirements on internal risk management that are intertwined with national company law as well as the corporate governance. By contrast, the detailed and highly prescriptive provisions on calculating capital requirements take the form of a regulation.

Valuation Adjustment (CVA) risk. CVA risk is the risk of loss caused by changes in the credit spread of counterparties due to changes in their credit quality. It has also been described as “the difference between the hypothetical value of the derivative transaction assuming a risk-free counterparty and the true value of the derivative transaction that takes into account the possibility of changes in creditworthiness of the counterparty, including the possibility of the counterparty’s default.” The purpose of CVA is to quantify the risk that counterparties to derivatives transactions may be more or less creditworthy at any given time during the life of a transaction because this will affect the value of the transaction to the counterparties.⁴⁵¹ It is explained by the European Commission that, “nearly two-thirds of the losses stemming from derivatives during the crisis were a direct consequence of the deterioration of the credit quality of the counterparty, and not necessarily triggered by the default of the counterparty.”⁴⁵² Therefore, the BCBS started to revise the current regulatory regime, and introduced a new capital requirement as to the CVA risk in the Basel III, aiming at improving banks’ resilience against the written-down/off losses due to the downgrade of creditworthiness of their counterparties.⁴⁵³ Indeed, in the derivatives market, the mark-to-market losses being a greater source of losses than those arising from outright defaults.

The CVA risk is also addressed by the CRR, although it differs in some significant respects with the Basel III proposal. The European CVA provisions have taken effect from 1 January 2014 and applies to credit institutions and investment firms entering into non-centrally cleared OTC derivatives transactions. Under the CRR, credit institutions and investment firms are required to hold additional own funds due to CVA risk arising from OTC derivatives (other than credit derivatives

⁴⁵¹ It is imperative that this value is as accurate as possible, particularly during times of market stress when markets are more volatile, so that counterparties can ensure that transactions are correctly valued for accounting purposes and appropriate regulatory capital is set aside to protect against the risk of insolvency arising from such losses.

⁴⁵² European Commission, Consultation on counterparty credit risk- frequently asked questions, 9 February 2011, available at http://europa.eu/rapid/press-release_MEMO-11-77_en.htm?locale=en, last visited on 10 March 2015.

⁴⁵³ See BCBS: Basel III: A global regulatory framework for more resilient banks and banking systems dated June 2011 at Section A, paragraph 2(14)(b).

used for credit risk mitigation⁴⁵⁴ purpose), and if CVA risk exposures are material, securities financing transactions.⁴⁵⁵ The measures target financial institutions specifically as they are perceived as being the most sensitive to systemic risk due to the sheer volume of derivatives exposures concentrated within a relatively small number of counterparties which could, as it did in 2008, lead to a simultaneous deterioration of credit quality at times of market stress and pro-cyclicality. It is worth noting that, in respect of un-cleared derivatives transactions, the EMIR also requires financial counterparties to hold an appropriate and proportionate amount of capital to manage the risk not covered by appropriate exchange of collateral. It is expected that this requirement will be satisfied by compliance with the CRR.⁴⁵⁶ It is, however, unclear how financial counterparties will be expected to comply with their EMIR capital obligations to the extent they are not subject to the CRR, i.e. they are not institutions.

2.2 Distinguish risk-weight calculation between centrally cleared and non-centrally cleared derivatives

Under the Basel capital regime, the risk weight is calculated by multiplying (a) the value of the asset by (b) the risk weight of the asset by (c) a credit conversion factor (if the asset is off-balance sheet), which is then multiplied by (d) 8% to come up with the amount of pillar one capital required to be held against the relevant exposure.

After the CRR entering into effect, the derivatives transactions are subject to specific valuation procedures under the chapter 4 provisions. It is provided that, “in case of certain repurchase transactions and derivative transactions that subjected to

⁴⁵⁴ Article 92(3)(d) CRR. “OTC derivatives” are not specifically defined in the CRR but derivative instruments relevant for counterparty credit risk purposes are listed in Annex II of the CRR. Annex II sets out a list of derivative types which includes derivatives within points (4) to (7) and (9) and (10) of Section C of Annex I of MiFID (2004/39/EC). “OTC” means derivatives executed on a regulated market or third country equivalent (this is how EMIR defines “OTC”). It is worth noting that the CRR definition of derivatives differs from EMIR in that it does not include point (8) of Section C of Annex 1 of MiFID. ⁴⁵⁵ Article 382(2) CRR. “Securities financing transactions” are not

⁴⁵⁶ See Joint ESMA/EIOPA/EBA Discussion Paper on Technical Standards on Risk Mitigation Techniques for Uncleared OTC Derivatives dated 6 March 2012.

daily marking-to-market model, a risk weight of 0% or 10% can be achieved.⁴⁵⁷ A nominal 2% risk weighting for certain derivative transactions that entered into CCP clearing, while there is not such favorable provision for non CCP clearing ones.

3. European Short Selling Regulation and OTC derivatives

In the modern financial system, especially during the last twenty years, different sectors, like the equity, bond and the derivatives market have been more and more tightly interconnected. The market participants could achieve similar economic interest in these different sectors. For example, if the market trader holds a short view to a certain stock, he could sell the stocks if he has, or he can buy CDSs against the depreciation of that stock. As transactions across different financial sector is becoming more and more easily, regulatory measures focused merely on one sector could be undermined by the cross-sector trading strategies. This regulatory loophole has been vividly manifested in this 2008 financial crisis.

When the crisis was escalated in the autumn 2008, U.S. and many European member states promulgated temporary ban on short selling financial share, trying at reducing the volatility of the stock market. However, their regulatory efforts generally did not work. To illustrate, on 19 September 2008, the SEC enacted the temporary short selling ban on 799 financial shares.⁴⁵⁸ But, it was demonstrated that the bid-ask spreads to the shares of these financial companies even widened, and the investor confidence declined significantly after this ban.⁴⁵⁹ So, one commentator referred to the short selling ban as one of the dumbest financial regulatory moves in 2008.⁴⁶⁰ It

⁴⁵⁷ Regulation (EU) No. 575/2013 of the European Parliament and of the Council of June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012, (CRR, for short), Article 222(4) and Article 222(5)

⁴⁵⁸ SEC chairman Chris Cox spoke candidly about the purpose of these regulations in an op-ed the wall street journal in July: “the ban is intended as a preventive step to help restore market confidence at a time when that is sorely needed.” See Samantha Buker, Short Selling Regulations, <http://www.whiskeyandgunpowder.com/Archives/2008/20080922.html> citing Op-Ed, The Wall Street Journal, July 24, 2008.

⁴⁵⁹ Washington Mutual and Wachovia are two good examples of financial companies that saw their stock continue to plummet after the SEC banned short selling.

⁴⁶⁰ Colin Barr, “21 Dumbest Moments in Business: Cox's Short-Selling Ban,” available at http://money.cnn.com/galleries/2008/fortune/0812/gallery.dumbest_moments_2009.fortune/12.html

was criticized that the main reason of this failure lies in that the temporary short selling requirement did not extend to the derivatives market, and the SEC did not collaborate with the CFTC.⁴⁶¹ The underlying reason is that speculators could short sell the interest of the relevant financial shares via the short selling of economically-related derivatives, thereby achieving the same short selling purpose on the financial shares. Thus, the short selling ban did not involve the relevant transactions of derivatives made the temporary short selling ban did not function. In light of this problem, after the crisis EU enacted its short-selling regulation, namely the European Short Selling and Certain Aspects of Credit Default Swaps (SSR, for short), extending the short selling regulation regime to the derivatives market.

3.1 Extend the short-selling regulatory regime to OTC derivatives transactions

Short selling against shares through relevant CDSs has also been clearly realized by the EU legislators. Thus, the SSR firstly extend the short selling regulation to relevant CDSs transactions. In Article 1 it is provided that “the scope of this regulation shall cover financial instruments that are admitted to trading on a trading venue in the Union;⁴⁶² derivatives that relate or refer to a financial instrument or to an issuer of

(last visited on 15 March 2015) (Stating that 'the emergency order temporarily banning short selling of financial stocks will restore equilibrium to markets,' Cox promises. But shares in banks, brokerages and insurance companies continue to plunge, losing a quarter of their value during the three weeks the mid-September order was effective. Some investors say the short ban hastened the flight of capital from stock and bond markets, by showing the government could intervene in markets in unexpected and troublesome ways.").

⁴⁶¹ See Christopher A. Stanley, "The Panic Effect: Possible Unintended Consequences of the Temporary Bans on Short Selling Enacted During the 2008 Financial Crisis," 4 *Entrepreneurial Business Law Journal* 277, 2009, p.282.

⁴⁶² Regulation (EU) No 236/2012 of the European Parliament and the Council of 14 March 2012 on short selling and certain aspects of Credit Default Swaps (OJ L 86/1) (SSR, for short hereinafter), Art.2 (1)(a) "financial instrument" means an instrument listed in Section C of Annex 1 to Directive 2004/39/EC, i.e. MIFID I, according to which the financial instruments include (1) transferable securities; (2) money-market instrument; (3) units in collective investment undertakings; (4) options, futures, swaps, forward rate agreements and any other derivative contracts relating to securities, currencies, interest rates or yields, or other derivatives instruments, financial indices or financial indices or financial measures which may be settled physically or in cash; (5) options, futures, swaps, forward rate agreements and any other derivative contracts relating to commodities that must be settled in cash or may be settled in cash at the option of one of the parties (otherwise than by reason of a default or other termination event); (6) options, futures, swaps and any other derivative contract relating

such a financial instrument;⁴⁶³ sovereign debt instruments and derivatives that relate or are referred to such sovereign debt instruments.⁴⁶⁴ Under this provision, almost all the OTC traded derivatives shall be included into the regulatory scope.

Specifically speaking, in order to have a comprehensive oversight to the short-sale positions in relation to shares and sovereign debts, the trading positions in relevant derivatives shall also be calculated. To achieve this goal, it is provided in Article 3 of SSR that, “positons in a transaction, which creates or relates to a financial instrument other than the shares and sovereign debts, where the effect or one of the effect of the transaction is to confer a financial advantage on the natural or legal person entering into that transaction in the event of a decrease in the prices or value of the share or debt instrument, shall be considered short positions of the related shares or sovereign debts under this regulation.”⁴⁶⁵ Conversely, “the position in the contract, under which the person entering into that contract would get economic advantage as the price or value of the responding shares or sovereign debts increase, then such positions shall be calculated as long position of that share or sovereign debt.”⁴⁶⁶ In other words, the use of derivatives, such as options, futures, which have the same economic interest as short selling shares and sovereign debts, shall be taken into account when calculate the short or long positons.⁴⁶⁷

After the derivatives trading position being calculated into relevant share or

to commodities that can be physically settled provided that they are traded on a regulated market and/or an MTF; (7) options, futures, swaps, forwards and any other derivative contracts relating to commodities, that can be physically settled not otherwise mentioned in C.6 and not being for commercial purposes, which have the characteristics of other derivative financial instruments, having regard to whether, inter alia, they are cleared and settled through recognized clearing houses or are subject to regular margin calls; (8) derivative instruments for the transfer of credit risk; (9) financial contracts for differences; (10) options, futures, swaps, forward rate agreements and any other derivative contracts relating to climatic variables, freight rates, emission allowances or inflation rates or other official economic statistics that must be settled in cash or may be settled in cash at the option of one of the parties (otherwise than by reason of a default or other termination event), as well as any other derivative contracts relating to assets, rights, obligations, indices and measures not otherwise mentioned in this section, which have the characteristics of other derivative financial instruments, having regard to whether, inter alia, they are traded on a regulated market or an MTF, are cleared and settled through recognized clearing houses or are subject to regular margin calls.

⁴⁶³ Derivatives referred to in points (4) to (10) of Section C of Annex 1 to MIFID I.

⁴⁶⁴ See SSR, Art.1.

⁴⁶⁵ See SSR, Art.3 (1).

⁴⁶⁶ See SSR, Art.3 (2).

⁴⁶⁷ SSR, Recite 12.

sovereign debt positions, the short-selling regulations to the share and sovereign debt will logically cover those relevant derivatives transactions. For example, the disclosure requirement to net short positions, the temporary trading restriction requirement in exceptional market situations and other specific regulations on short selling will automatically applicable to derivatives market. From doing so, the market participants who want to circumvent the short-selling regulation via the derivatives market would be legally impossible.

3.2 Ban the trading of naked Sovereign Credit Default Swaps

As argued before, the speculative transactions on Sovereign Credit Default Swaps (SCDS)⁴⁶⁸ exacerbated the European Sovereign Debt Crisis. Abundant speculative SCDS transactions sent a strong signal to the financial market that the default possibility of the southern European countries was becoming higher, and thereby the borrowing cost for the peripheral European countries became very burdensome. In order to reduce speculations on the sovereign debt market, it is necessary to restrict the naked sovereign CDS, especially when the sovereign debt market is becoming volatile. In this regard, the European Commissioner at that time, Mr. Barnier argued, “we cannot tolerate speculation on uncovered SCDS, the bans on such CDS trading is a key provision of the European regulation on short selling.”⁴⁶⁹

In this regard, it is provided in Article 14 of SSR that “a natural or legal person may enter into SCDS transactions only where that transaction does not lead to an uncovered position.”⁴⁷⁰ Hence, this provision clearly bans naked short selling on SCDSs. Under the framework of SSR, it is further explained that “an uncovered position in a SCDS means that a person enters into a SCDS that does not serve to hedge against the risk of default of the issuer where the person has a long position in

⁴⁶⁸ A Sovereign-Credit-Default-Swap (SCDS) is a CDS with the reference entity of a sovereign state, in which the seller of the SCDS agrees to compensate the buyer in the event of the default of the referenced sovereign state.

⁴⁶⁹ European Commission, Proposal for SSR, COM (2010) 482 final.

⁴⁷⁰ SSR, Art.14 (1).

the sovereign debt of that issuer; or the risk of a decline of the value of the sovereign debt where the person holds assets or is subject to liabilities, including but not limited to financial contracts, a portfolio of assets or financial obligations the value of which is correlated to the value of the sovereign debt.”⁴⁷¹ Nevertheless, the restriction on trading uncovered SCDS could be temporarily suspended by the competent authorities of member states, where the competent authorities believe that such restriction might have a negative impact on the SCDS market, especially by increasing the cost of borrowing or affecting the sovereign issuers’ ability to issue new debt.⁴⁷² But, before the decision of suspending such restriction, the relevant competent authority shall notify ESMA and the other competent authorities of the proposed suspension and the grounds on which it is based.⁴⁷³ The suspension shall be valid for an initial period not exceeding 12 months from the date of its publication on the website of the relevant competent authority, and the suspension could be renewed for not exceeding 6 months if the conditions for the suspension still exist.⁴⁷⁴ Otherwise, if the suspension is not renewed by the end of the initial period or of any subsequent renewal period, it shall automatically expire.⁴⁷⁵

Furthermore, certain types of SCDSs transactions could also be prohibited in exceptional market circumstances. In the proposal of SSR, the European Commission claimed that in exceptional situations it may be necessary for competent authorities to prohibit or restrict short selling activities⁴⁷⁶ Then this idea was accepted by SSR, which provides that “a competent authority may restrict the ability of natural or legal persons to enter into SCDS or may limit the value of SCDS positions where there are adverse events or developments which constitute a serious threat to financial stability

⁴⁷¹ SSR, Art.4 (1).

⁴⁷² SSR, Art.14 (2). The decision of temporary suspension regarding the restriction on uncovered SCDS trading shall be based on the following objective indicators: a) a high or rising interest rate on the Sovereign Debt; b) a widening of interest rate spreads on the Sovereign Debt; c) a widening of the SCDS compared to the own curve and compared to other sovereign issuers; d) the timeliness of the return of the price of the sovereign debt to its original equilibrium after a large trade; e) the amounts of Sovereign Debt that can be traded.

⁴⁷³ SSR, Art.14 (2).

⁴⁷⁴ Ibid.

⁴⁷⁵ Ibid.

⁴⁷⁶ European Commission, Proposal for SSR, COM (2010) 482 final., p.9.

or to market confidence in the member state concerned or in one or more other member states; and the measure is necessary to address the threat and will not have a detrimental effect on the efficiency of financial markets which is disproportionate to its benefits.⁴⁷⁷ Such restrictions may apply to SCDS transactions of a specific class or to specific SCDS transactions.⁴⁷⁸ But, if specifically provided by the competent authorities of member states, the market making activities and primary market activities could be exempted from this provision.⁴⁷⁹

As certain measures may involve monitoring or enforcement against natural or legal persons outside the Union, EU regulators should be encouraged to reach cooperation agreements with regulators in third countries where EU shares or sovereign bonds and associated derivatives are traded. This would facilitate the exchange of information and enforcement of the obligations, as well the taking of similar measures by third country regulators in exceptional situations where there is a serious threat to financial stability or market confidence in the Union. ESMA should play a role in coordinating the development of cooperation agreements and the exchange of information received from third country regulators.

4. European Market Abuse Regulation and OTC derivatives

EU started its regulation on market abuse from 2003, when the Market Abuse Directive 2003/6/EU (MAD) was enacted. Although the MAD had played an important role in prevent market abuse across the European Union, the weakness of this regulation also exposed in the 2008 financial crisis. Therefore, the European Commission also began to revise the MAD after the crisis, especially aimed at fighting against the market abuse activities across the commodity and the related derivatives market. In June 2014, the Commission's proposal on revising the MAD was enacted by the European Council and the European Parliament, which includes a

⁴⁷⁷ SSR, Art.21 (1).

⁴⁷⁸ SSR, Art.21 (2).

⁴⁷⁹ Ibid.

Market Abuse Regulation (MAR) and a Market Abuse Directive (MAD II). In order to fight against cross-market abuse, the MAR greatly extended its regulatory scope to all financial instruments traded in qualified European trading venues and the relevant commodity spot markets.⁴⁸⁰

4.1 Extend market abuse regulation to OTC derivatives

Adopted in early 2003, the MAD has introduced a comprehensive framework to tackle insider dealing and market manipulation practices of “financial instruments” that are admitted to trade in the regulated markets. However, after the adoption of MIFID in 2004, financial instruments have been increasingly traded on MTFs, on other types of OTFs, such as Swap execution facilities or broker crossing systems, or only traded OTC.⁴⁸¹ The increase of trading across different venues had made it more difficult to monitor possible market abuse activities.⁴⁸² Hence, it is obvious that the regulatory ambit of MAD is not sufficient to cover standardized financial instruments. Having seen this gap, the MAR extends the regulatory scope to any financial instruments traded on MTFs or OTFs, apart from those traded on traditional regulated markets, i.e. the exchanges. It is provided in article 2 of MAR that, “this regulation will apply to, (a) financial instruments admitted to trading on a regulated market or for which a request for admission to trading on a regulated market has been made; (b) financial instruments traded on an MTF, admitted to trading on an MTF or for which a request for admission to trading on an MTF has been made; (c) financial instruments traded on an OTF.”⁴⁸³ Namely, all the financial instruments, including derivatives, will be regulated under the market abuse regulation.⁴⁸⁴

⁴⁸⁰ As provided in the MIFIR, the ambit of European trading venues has also been extended to OTFs.

⁴⁸¹ European Commission, Proposal for a Regulation of the European Parliament and of the Council on insider dealing and market manipulation (market abuse), (Proposal for MAR hereinafter), COM (2011) 651 final.

⁴⁸² Ibid.

⁴⁸³ Regulation (EU) No 596/2014 of the European Parliament and of the Council on market abuse, (MAR hereinafter), Art.2 (1).

⁴⁸⁴ As MIFIR has been adopted, which impels the centrally clearing OTC derivatives to be traded in the European trading venues, i.e. regulated markets, MTFs and OTFs, most of the OTC derivatives transactions will enter into trading venues, and thus will be subjected to the MAR anti- market abuse

Furthermore, in light of the lessons learned from the crisis that the stock market abuse could be achieved through the activities in derivatives market, thus, OTC derivatives not traded on EU trading venues shall also be included into the market abuse regulation. Therefore, the article 2 of MAR also specifically provided that, “this regulation applies to the ‘financial instruments’ not traded in the trading venues, the price or value of which depends on or has an effect on the price or value of a trading venue traded financial instrument, including, but not limited to, credit default swaps and contracts for difference.⁴⁸⁵ Hence, under the MAR, not just OTC derivatives admitted in the trading venues, but also OTC derivatives related to financial instruments traded in trading venues will be encompassed into the regulatory regime. And then, the OTC derivatives will comply with the obligations laid down in the MAR, such as manager’s transaction report obligation, administrative sanctions and so on.

4.2 Regulating the commodity derivatives related spot commodity contracts

Spot commodity markets and related commodity derivative markets are highly interconnected, and market abuse may easily take place across these markets.⁴⁸⁶ However, before the crisis, the MAD’s rules only apply to exchange traded commodity futures, which means that the OTC commodity market is outside the purview of the regulators and opaque to the investors. Hence the investors in commodity derivatives may be less protected than investors in derivatives of financial markets because a person could benefit from inside information in a spot market by trading on a related derivative market.⁴⁸⁷ This weakness of the MAD has been clearly exposed in the financial crisis, thereby, in order to avoid market abuse in the derivatives market through the relative spot commodity market, it is critical to enlarge

regime.

⁴⁸⁵ MAR, Art.2 (1).

⁴⁸⁶ European Commission Proposal for MAR, COM (2011) 651 final.

⁴⁸⁷ Ibid.

the regulatory confine to the spot market.⁴⁸⁸

The MAR will, in substantial, cover the transactions or behaviors in the spot commodity markets that are related to and have effects on the derivatives transactions traded in the EU trading venues. For this reason, firstly, the definition of inside information of commodity derivatives should be aligned to the general definition of inside information, extending it to price sensitive information relevant to the related spot commodity contract as well as to the derivative itself.⁴⁸⁹ in this regard, it is provided in MAR that “in relation to commodity derivatives, information of a precise nature, which has not been made public, relating directly or indirectly to one or more such derivatives or relating directly to the related spot commodity contract, and which, if it were made public, would be likely to have a significant effect on the prices of such derivatives or related spot commodity contracts, and where this is information which is reasonably expected to be disclosed or is required to be disclosed in accordance with legal or regulatory provisions at the Union or national level, market rules, contract, practice or custom, on the relevant commodity derivatives markets or spot markets.”⁴⁹⁰ Secondly, in grappling with market manipulation via spot market, the conduct of market manipulation through the transactions of spot commodity contracts are deemed as “market manipulation” behavior that shall be prohibited under this regulation. It is stipulated in MAR that “the conduct to secure a dominant position over the supply of or demand for a financial instrument, related spot commodity contracts, which has, or is likely to have, the effect of fixing, directly or indirectly, purchase or sale prices or creates, or is likely to create, other unfair trading conditions shall be considered as market manipulation behaviors.”⁴⁹¹

⁴⁸⁸ Nevertheless, MAR does not intend to directly govern the spot market, the mandate of which will be left to specific and sectorial regulations, such as the EU’s proposal on the regulation regarding its energy market (REMIT). see European Commission Proposal for MAR, COM (2011) 651 final.

⁴⁸⁹ European Commission Proposal for MAR, COM (2011) 651 final.

⁴⁹⁰ MAR, Art.7 (1)(b).

⁴⁹¹ See MAR, Art.12 (2)(a).

5. Conclusion

In this chapter, we argued that apart from the EMIR, other EU regulations that enacted or updated after the crisis also contributed the sound and comprehensive regulation to the OTC derivatives. Then, we elaborated the legal rules in these specific regulations that related to the OTC derivatives trading one by one. First, the MIFIR required that all derivatives subject to the central clearing obligation shall be traded on a qualified EU trading venue. Meanwhile, the MIFIR require the derivatives trading on the trading venues shall disclose the relevant pre-trade and post-trade contract information as laid down in detail in this regulation. Second, the CRR requires financial institutions that trade derivatives shall set aside a sum of own fund in preventing Credit Adjustment Risk; and the CRR laid down different credit risk weight calculation for centrally cleared and non-centrally cleared derivatives so as to incentivize more derivatives entering into central clearing. Third, The SSR extended European short-selling regulation to derivatives market, in which naked short selling on sovereign credit default swaps is prohibited. Fourth, the MAR extended the market abuse regulation to derivatives market. Especially, the MAR restrict market abuse across the derivatives market and the spot commodity market.

In sum, these specific provisions in these regulations elaborated in this chapter would complement the EMIR in making the derivatives market more transparency and integrity, and less risky for the whole financial system.

Conclusions

CDS, as a product of financial innovation, has incurred controversial views since its inception. On the one hand, it is an efficient instrument to transfer burdensome credit risk for the banks and other financial institutions, and thereby promoting the stability and efficiency of the financial system. On the other hand, the CDSs transaction is opaque and risky. Before the crisis, speculative CDSs transactions basically dominated this market, which resulted in huge risk accumulated in the financial system, and finally imploded the financial system. Therefore, after the Crisis, CDSs were widely blamed. In order to prevent ourselves from a next crisis resulted from the derivatives trading again, a thorough research both from the economic and law perspective shall be justified. In this dissertation, we divided the content in three parts. Firstly, we gave a comprehensive introduction to the CDSs and its market development before the crisis so as to demystify this continually innovative financial product and its market development. Secondly, we had a research on the relationship between the CDSs transactions and the 2008 financial crisis so as to understand how the CDSs related to the crisis. Then, in Part II we had a thorough inquiry into the legal origins of the crisis in terms of CDSs. After that, in Part III, we further analyzed the EU's regulatory reform against the OTC derivatives market. EU's regulations regarding to the OTC derivatives will become a legislative model around the world, although its effectiveness still needed to be seen in the future. The research results are the followings.

1. Regarding to the relationship between the CDSs and the 2008 crisis.

Generally speaking, this relationship is two folds, namely on the one hand, CDSs facilitated the creation and selling of mortgage-backed securities, which drove the banks to grant more subprime mortgage loans. Thus, the U.S. housing bubble was irrationally propagated and huge risk accumulated. In this process, CDSs promoted the happening of the 2008 financial crisis. On the other hand, CDSs exacerbated the crisis when it erupted. In this regard, CDSs are imputable for three reasons. First,

speculative CDSs transactions, such as naked synthetic CDOs, multiply amplified losses relating to mortgage-backed securities. Second, CDSs trading directly stumbled systemic important financial institutions, especially the AIG, which directly escalated the crisis. Third, opaque CDSs transactions weaved the financial system into a tightly interconnected network, thus potential systemic risk had been created. Due to the opaque, risky and interconnected of this market, panic easily spread over the financial system, and the financial system suddenly froze.

2. Regarding to the legal origins of the 2008 financial crisis, we developed three arguments.

First, we argued that the CFMA provided a legal prerequisite for the developing of speculative OTC derivatives, including CDSs, transactions. Namely, the CFMA removed the legal barrier for speculation on CDSs. We elaborated the common law approach towards speculative commodity derivatives and the codification of this doctrine into the U.S. Commodity Exchanges Act of 1936. The doctrine of “difference contracts” developed by the American Judges make the speculations on commodities void, namely the speculations would not get protection from the courts. So, speculative activities were greatly impeded. And under the CEA, this doctrine was further strengthened, speculations were considered not just void but also crimes. Hence, speculative derivatives transactions were appropriately restricted within a reasonable level. In 2000, the notorious CFMA was enacted, and the traditional common law doctrine of “difference contracts” was totally erosion along with the abrogation of the CEA. In practice, OTC derivatives, in particular, the CDSs market really have undergone a rapid growth and dominated by the speculative transactions. It shall be stressed that, for sure, the economic motion is the fundamental reason for the market thrive. Nevertheless, the erosion of the common law doctrine of “difference contracts” consist of the fundamental institutional reason for the excessive speculative CDSs transactions.

Second, We argued that the collisions between the bankruptcy pro-debtor rules and the ISDA Master Agreement rules is the direct reason drove the OTC derivatives

industry to lobby the U.S. Congress and EU parliament to exempt bankruptcy law pro-debtor rules from applying to OTC derivatives. We elaborated in detail the bankruptcy law “pro-debtor” principle and its main rules, namely the rule of “automatic stay”, “cherry-picking” and “preferential and fraudulent transfer.” Thereafter, we looked into the special trading rules for the OTC derivatives practice established by the OTC derivatives industry association ISDA. Those special trading rules include the “single-agreement arrangement,” the “close-out netting” and “margins exchange.” Furthermore, we advanced that the exemptions caused a bankruptcy “safe harbor” for OTC derivatives transactions, which not only promoted the proliferation of speculative derivatives, including CDSs trading, but also caused a similar “bank run” as to the derivatives traders, such as AIG. Therefore, it could be claimed that the erosion of the bankruptcy pro-debtor principle is the direct institutional reason for the escalation of the 2008 financial crisis when AIG failed.

Third, we developed the argument that the “bankruptcy safe harbor” for OTC derivatives caused the erosion of the traditional common law doctrine of “secret lien.” After the erosion of this doctrine, the counterparty risk private-monitoring mechanism has been broke. It seems to us that AIG used the CDSs trading to make money but with potential obligation to repay the money. While CDSs contracts could be quasi-secured under the bankruptcy safe harbor and the trading information was unknown to others, so the AIG always seems more creditable to others. This caused AIG could do much more transactions, and the counterparties of AIG were less vigilant to investigate and monitor AIG’s real creditworthiness. Therefore, we believe that the erosion of the common law doctrine of “secret lien” is an underlying institutional reason why AIG could sell out the huge amount of CDSs contracts and its final breakdown.

3. In terms of the European regulatory reform against the OTC derivatives market.

Firstly, we focused ourselves on analyzing the EU’s regulation on “OTC derivatives, central counterparties and trade repositories,” also shortly named as

EMIR (European Market Infrastructure Regulation). Before analyzing concrete rules of EMIR, we firstly discussed the background of the drafting of EMIR, specifically we have talked about the international regulatory reform against the OTC derivatives market after the crisis, and we argued that EU's regulatory efforts shall be in line with the internationally coordinated regulatory actions, without which a single jurisdiction's regulatory effort regarding the derivatives market would be greatly dampened. In fact, after completely reviewed the EMIR, we consider that EU's regulatory approaches toward the OTC derivatives market are fully consistent with its international commitments. We also introduced the regulatory and supervisory architecture reform in the EU. Before the crisis, EU's regulatory and supervisory structure was based on the "Lamfalussy four-level" design, under which there was no strong regulatory and supervisory power at the EU level. In light of the borderless nature of derivatives trading, after the crisis the EU has greatly raised regulatory power of the EU level authorities. A new European System of Financial Supervision (ESFS) was set up. Now, ESMA is the organ responsible for regulating the derivatives market, which has the power to develop concrete supervisory standards as to the CCPs and ESMA directly supervise the EU based trade repositories.

The EMIR has entered into force on 16 August 2012. We argued that under the EMIR a new trading structure of the OTC derivatives market will be formed. The EMIR regulatory approaches are different with traditional regulatory ones, given that EMIR entrusts the regulators less "direct intervene power" in relation to the private transactions, but emphasizes on establishing a new market transaction infrastructure for derivatives trading. In sum, there are two main approaches that have been laid down in EMIR in relation to the regulation of the OTC derivatives market. One is the central clearing obligation. Under this provision, the financial counterparties and the non-financial counterparties with the derivatives trading volume beyond the "clearing threshold" shall novated their derivatives contracts in qualified CCPs and cleared through the CCPs. We agree with the EMIR legislators that the CCP clearing requirement could reduce systemic risk in the sense that the original

high-interconnected derivatives market could be unlocked, and hence a “domino effect” or the “contagion risk” when one main derivatives trader default would spread across the financial system could be prevented. But, as the CCPs will become the counterparties of every derivatives traders, risks will be correspondingly concentrated on CCPs. Thus, CCPs shall be strictly regulated. In this regard we also elaborated the detailed provisions in EMIR, such as the authorization, the prudential operation rules. The second approach of EMIR is the provision of mandatory trading report obligation. Namely, all the derivatives transactions shall be timely reported to a qualified trade repository. As manifested in the 2008 crisis, the opaqueness of the derivatives trading is the main reason of the escalation of the crisis. This provision could greatly increase the transparency of the OTC derivatives market, which is essential to maintain the integrity and stability of this market. The EMIR also noticed that not all OTC derivatives contracts would be suitable for central clearing, thus, some provisions to reinforce the risk-management of those non-centrally cleared derivatives contracts were also laid down in this regulation.

We questioned the effectiveness of the CCP clearing approach of EMIR in preventing systemic risk. Particularly, we advanced the concern about the concentration of risk in CCPs, which might exceed CCPs’ ability to assume. In the current legal environment, there are several incentives for derivatives traders to novated their contracts in CCPs but without caring about the creditworthiness of the CCPs. Moreover, the prudential rules laid down by the EMIR could also not function, given that the competition between CCPs would result in loosening the standards of central clearing. And the “jump-t0-default” risk of CDSs clearing might directly push down a CCP, the margins and the default funds would not absorb the losses of even one clearing member’s default, for example a trader like AIG. Anyway, the effectiveness of the CCPs clearing will be further examined, and the concrete provisions shall be gradually refined according to the practice.

Secondly, we argued that apart from the EMIR, other EU regulations that enacted or updated after the crisis also contributed the sound and comprehensive regulation to

the OTC derivatives. Then, we elaborated the legal rules in these specific regulations that related to the OTC derivatives trading one by one. First, the MIFIR required that all derivatives subject to the central clearing obligation shall be traded on a qualified EU trading venue. Meanwhile, the MIFIR require the derivatives trading on the trading venues shall disclose the relevant pre-trade and post-trade contract information as laid down in detail in this regulation. Second, the CRR requires financial institutions that trade derivatives shall set aside a sum of own fund in preventing Credit Adjustment Risk; and the CRR laid down different credit risk weight calculation for centrally cleared and non-centrally cleared derivatives so as to incentivize more derivatives entering into central clearing. Third, The SSR extended European short-selling regulation to derivatives market, in which naked short selling on sovereign credit default swaps is prohibited. Fourth, the MAR extended the market abuse regulation to derivatives market. Especially, the MAR restrict market abuse across the derivatives market and the spot commodity market.

Reference

Articles:

1. Antonelli Gilberto, "Global Economic Crisis and Systemic Failure," *Journal of Analytical and Institutional Economics*, Vol. XXVIII, No. 3, 2011
2. Antonelli Gilberto, "Emerging Powers Development, Global Economic Crisis and Value Chains Restructuring", in B. Rehbein (ed.), *Globalization and inequality in emerging societies*, Palgrave Macmillan, 2011
3. Brendan Sapien, "Financial Weapons of Mass Destruction: From Bucket Shops to Credit Default Swaps," 19 *Southern California Interdisciplinary Law Journal* 411
4. Ulrike Shaede, "Forwards and Futures in Tokugawa-period Japan: A New Perspective on the Dojima Rice Market," 13 *Journal of Banking and Finance* 487, 1989.
5. Timothy P. W. Sullivan, "Swapped Disincentives: Will Clearinghouses Mitigate the Unintended Effects of the Bankruptcy Code's Swap Exemptions?" 80 *Fordham Law Review* 1491, 2011
6. Houman B. Shadab, "Counterparty Regulation and Its Limits: The Evolution of the Credit Default Swaps Market," *New York Law School Law Review*, Vol. 54, 2009,
7. Houman B. Shadab, "Guilty by Association? Regulating Credit Default Swaps," 4 *Entrepreneurial Business law Journal* 407, 2010.
8. Eliana Angelini: "Credit Default Swaps and Their Role in the Credit Risk Market," *International Journal of Academic Research in Business and Social Science* Vol.2, No.1, 2012.
9. Douglas B. Levene: "Credit Default Swaps and Insider Trading," 7 *Virginia Law &*

Business Review 231, 2012.

10. Robert. F. Schwartz, "Risk Distribution in the Capital Markets: credit default swaps, insurance and a theory of demarcation," 12 *Fordham Journal of Corporate & Financial Law* 167, 2007

11. Gillian Tett, "Fool's Gold, How Unrestrained Greed Corrupted a Dream, Shattered Global Markets and Unleashed a Catastrophe," *Abacus*, 2010

12. Janis Sarra, "Financial Market Destabilization and the Role of Credit Default Swaps: An International Perspective on the SEC's Role Going Forward," 78 *University of Cincinnati Law Review* 629, 2009.

13. Lynn A. Stout, "Derivatives and the Legal Origin of the 2008 Credit Crisis," 1 *Harvard Business law Review* 1, 2011.

14. Lynn Stout, "Why the Law Hates Speculators," 48 *Duke Law Journal* 701, 1999.

15. Lynn Stout, "Betting the Bank: How Derivatives Trading under Conditions of Uncertainty Can Increase Risks and Erode Returns in Financial Markets," *Journal of Corporate Law*, 1995

16. Lynn Stout, "Regulate OTC Derivatives by Deregulating Them," *Banking & Financing*, Fall 2009

17. David Z. Nirenberg & Richard J. Hoffman, "Are Credit Default Swaps Insurance," 3 *Derivatives Report* 7, 2001.

18. Dawood Ashraf et al., "Who Transfers Credit Risk, Determinants of the Use of Credit Derivatives by Large US Banks," *The European Journal of Finance*, Vol. 13, No.5, July 2007.

19. Andre W. Lo, "Reading about the Financial Crisis: A Twenty-One Book Review," *Journal of Economic Literature*, Vol. 50(1), 2012

20. Benjamin J. Keys et al, "Did Securitization Lead to Lax Screening? Evidence form subprime loans," *Quarterly Journal of Economics*, February 2010

21. Scott E. Harrington, "The Financial Crisis, Systemic Risk, and the Future of Insurance Regulation," *Journal of Risk and Insurance*, Vol. 76, Issue 4, December 2009
22. Andrew G. Simpson, "Greenberg: AIG's Risky Subprime Activity Exploded after He Left," *Insurance Journal*, October 10, 2008
23. Jack Bouboushian, "Mutual Funds Sue AIG for billions," *Courthouse News Service*, 8 August 2013
24. Henry T. C. Hu & Bernard S. Black, "Debt, Equity, and Hybrid Decoupling: Governance and Systemic Risk Implications," *European Financial Management*, Vol.14, 2008
25. Albert C. Stevens, "Futures in the Wheat Market," *Quarterly Journal of Economics*," Vol.2, No.1, 1887
26. Timothy E. Lynch, "Gambling by another Name; the Challenge of Purely Speculative Derivatives," *Stanford Journal of Law, Business and Finance*, Vol.17, No.1, 2012
27. Jonathan Ira Levy, "Contemplating Delivery: Futures Trading and the Problem of the Commodity Exchange in the United States 1875- 1905," 3 *Am. Hist. Rev.* 307, 2006
28. Franklin R. Edwards & Edwards R. Morrison, "Derivatives and the Bankruptcy Code: Why the Special Treatment?" 22 *Yale Journal of Regulation* 91, 2005
29. Stephen Lubben, "Chapter 11 at the crossroads: does reorganization need reform? : Repeal the safe harbors," 18 *American Bankruptcy Institute law review* 319, 2010
30. Steven L. Schwarcz & Ori Sharon, "the Bankruptcy-law Safe Harbor for Derivatives: A Path-Dependence Analysis," *Washington and Lee Law Review*, Vol.71 No.3, 2014
31. Steven L. Schwarcz, "Systemic Risk," *The Georgetown Law Journal*, Vol. 97,

2008

32. Jonathon Keah Hance, "Derivatives in Bankruptcy: Lifesaving Knowledge for the Small Firms," *65 wash. & lee l. rev.* 711, 2008
33. Norman M. Feder, "Deconstructing Over-the-Counter Derivatives," *2002 Colum. Bus. L. Rev.* 677
34. Christoph Henkel, "Harmonizing European Union Banking Resolution: Central Clearing of OTC Derivative Contracts Maintaining the Status Quo of Safe Harbors", *22 Transnational Law & Contemporary Problems* 81, 2013.
35. Peter F. Coogan, "Public Notice under the Uniform Commercial Code and Other Recent Chattel Security Laws, Including 'Notice Filing'," *47 Iowa L. Rev.* 289, 1962
36. Michael Simokovic, "Secret Lien and the Financial Crisis of 2008," *83 American Bankruptcy Law Journal* 253, 2009
37. Michael Simokovic, "Competition and Crisis in Mortgage Securitization," *Indiana Law Journal*, Vol.88, 2013
38. Douglas G. Baird and Thomas H. Jackson, "Fraudulent Conveyance Law and Its Proper Domain," *38 Vanderbilt Law Review* 829, 1985
39. Jonathan C. Lipson, "Secret and liens: verification and measurement in commercial financial law," *21 Emory Bankr. Dev. J.* 421, 2005
40. Scott Pryor, "Revised Uniform Commercial Code Article 9: Impact in Bankruptcy," *7 Am. Bankr. Inst. L. Rev.* 465, 1999
41. Beth A. Diebold, "The Expanding Concept of Security Interests: An Introduction to Revised UCC Article 9," *Loyola consumer law review*, Vol. 12, Issue 2, 2000
42. Hans Kuhn, "Multi-state and International Secured Transactions under Revised Article 9 of the Uniform Commercial Code," *40 Va. J. Int'l L.* 1009, 1999
43. Steven L. Schwarz, "Systemic risk," *Georgetown Law Journal*, Vol. 97, No.1, 2008.

44. Willian K. Sjostrom, Jr., "The AIG Bailout," 66 *Wash. & Lee L. Rev.* 943, 2009.
45. Adam R. Waldman, "OTC Derivatives and Systemic Risk: Innovative Finance or the Dance into the Abyss?" 43 *AM. U.L.REV.* 1023, 1994
46. Manuel A. Utset, "Complex Financial Institutions and Systemic Risk," 45 *GA. L. REV.* 779, 2011
47. Mark J. Roe, "The Derivatives Market's Payment Priorities as Financial Crisis Accelerator," 63 *STAN. L. REV.* 539, 2010-11
48. Jeremy C. Kress, "Credit Default Swaps, Clearing Houses, and Systemic Risk: Why Centralized Counterparties must Have Access to Central Bank Liquidity," 48 *Harvard Journal on Legislation* 49, 2011
49. N. Moloney: EU Financial market regulation after the global financial crisis: More Europe or More risks?" *Common Market Law Review*, 47 (5), 2010
50. Daria S. Latysheva, "Taming the Hydra of Derivatives Regulation: Examining New Regulatory Approaches to OTC Derivatives in the United States and Europe," 20 *Cardozo Journal of International and Comparative Law* 465, 2012
51. Christopher A. Stanley, "The Panic Effect: Possible Unintended Consequences of the Temporary Bans on Short Selling Enacted During the 2008 Financial Crisis," 4 *Entrepreneurial Business Law Journal* 277, 2009
52. Rene M. Stulz, "Credit Default Swaps and the Credit Crisis," *Journal of Economic Perspectives*, Vol.24, 2009
53. Craig Pirrong, "The Clearinghouse Cure," *Regulation*, Vol.31, No.4, Winter 2008-09
54. Benjamin. B. Saunders, "Should Credit Default Swap Issuers Be Subject to Prudential Regulation?" *Journal of Corporate Law Studies*, October 2010
55. David A. Skeel Jr. and Frank Partnoy, "The Promise and Perils of Credit Derivatives", 75 *University of Cincinnati Law Review* 1019, 2007

56. Eric C. Chaffee, *Finishing the Race to the Bottom: An Argument for the Harmonization and Centralization of International Securities Law*, *Seton Hall L. Rev.* 1581, 2010.
57. Oliver Hart & Luigi Zingales, “A New Capital Regulation for Large Financial Institutions,” *CEPR Discussion Papers* NO.DP7289, 2009
58. Darrell Duffie: “Innovations in credit risk transfer: Implications for financial stability,” *BIS Working Paper* No.255, 2007
59. Sarai Criado et al., “Structured Finance and the Financial Turmoil of 2007-2008: An Introductory Overview,” *Bank of Spain Working Paper Series*, No.0808, 2008.
60. Yongheng Deng et al., “CDO Market Implosion and the Pricing of Subprime Mortgage-Backed Securities,” *Working Paper*, March 2009.
61. Uday Raja et al., “The Failure of Models that Predict Failure: Distance, Incentives and Defaults,” *Chicago GSB Research Paper* No. 08-19; *EFA 2009 Bergen Meetings Paper*; *Ross Scholl of Business Paper* No.1122, 2010.
62. Joshua D. Coval et al., “The Economics of Structured Finance,” *Harvard Business School Working Paper* No. 09-060, 2008
63. Marc Labonte, “Monetary Policy and the Federal Reserve: Current Policy and Conditions,” *Congressional Research Service* 7-5700, 2014
64. Gary Gorton et al., “Special Purpose Vehicles and Securitization,” *FRB Philadelphia Working Paper* No. 05-21, 2006
65. M. Todd Henderson, “Credit Derivatives Are Not ‘insurance’”, *University of Chicago John M. Olin Law & Economics Working Paper* No. 476, 2009
66. M. Singh et al., “Deleveraging after Lehman –Evidence form Reduced Re-hypothecation,” *IMF Working Paper* No.09/42, 2009
67. Malcolm D. Knight, “Reforming the Global Architecture of Financial Regulation,” *CIGI Pagets* No.42, September 2014

68. Yuliya. Demyanyk & Van Hemert, "Understanding the Subprime Mortgage Crisis", *Working Paper Series*, Social Science Electronic Publishing, 2011
69. David Skeel, "The New Financial Deal: Understanding the Dodd-Frank Act and Its Consequences," *University of Pennsylvania Law School, Institute for Law and Economics (ILE) Research Paper* No. 10-21, 2011.
70. United States General Accounting Office, "Financial Derivatives: Actions Needed to Protect the Financial System," *Report to Congressional Requestors*, GAO/GGD-94-133, 7, May 1994
71. Edward R. Morrison & Joerg Riegel, "Financial contracts and the New bankruptcy code: insulating markets from bankrupt debtors and bankruptcy judges," *Columbia Law School The Center for Law and Economic Studies Working Paper* No. 291, 2006.

Monographs

1. Laurent L. Jacque, "Global Derivatives Debacles: From Theory to Malpractice," *World Scientific Publishing Company*, 2010,
2. Vinod Kothari, "Credit Derivatives & Structured Credit Trading," *Wiley*, 2009
3. Dimitris N. Chorafas, "Capitalism without capital," *Palgrave*, 2009
4. George Chacko et al., "Credit derivatives: A primer on Credit Risk, Modeling, and Instruments," 1st ed. *FT Press*, June 2006.
5. John C. Hull, "Options, Futures, and Other Derivatives," *Prentice Hall*, 2011
6. Robert J. Shiller, "the Subprime Solution: How Today's Global Financial Crisis Happened, and What To Do About It," *Princeton University Press*, 2008
7. Charles Goodhart, "Financial Regulation, Handbook of Central Banking, Financial Regulation and Supervision after the Financial Crisis," *Edward Elgar Press*, 2011
8. Mehraj Mattoo, "Structured Derivatives: New Tools for Investment Management a Handbook of Structuring, Pricing & Investor Applications," *Financial Times Press*, 1997.
9. Darrell Duffie, "Futures Market," *Prentice Hall College Press*, 1989

10. Phillip Wood, "Law and practice of international finance," *Sweet & Maxwell*, University Edition, October 2007
11. G. F. Campobasso, "Diritto Commerciale," Vol. 1 Diritto dell'impresa, 6th edition, UTET, 2010.
12. Niamh Moloney, "EC Securities Regulation" Oxford EC Law Library (second edition), 2008
13. Susan Rose-Ackerman & Peter L. Lindseth, *Comparative Administrative Law*, Edward Elgar Publishing, 2011
14. Ellis Ferran et al., "The Regulatory Aftermath of the Global Financial Crisis," Cambridge Press, 2012
15. Francis Snyder et al., "The visible hand: European and Global Perspective on Financial Market Regulation and Economic Governance," *Bruylant*, 2012.
16. Michiel Luchtman, "European Cooperation between Financial Supervisory Authorities, Tax Authorities and Judicial Authorities," *Intersentia Publishers*, 2008
17. J. Ernoult et al., "European Banking and Financial Services Law," *Larcier* (Third edition), 2008
18. Raffaele Scalcione, "The Derivatives Revolution: A Trapped Innovation and a Blueprint for Regulatory Reform," *Wolters Kluwer*, 2011

Official Reports

1. European Commission, "Communication: Ensuring efficient, safe and sound derivatives markets," Com (2009) 332
2. European Commission, "Communication: Ensuring efficient, safe and sound derivatives markets: Future Policy Actions," Com (2009) 563
3. European Commission, "Report on the Operation of the European Supervisory Authorities (ESAs) and the European System of Financial Supervision (ESFS)," Com (2014) 509
4. The Financial Crisis Inquiry Commission (FCIC) Report, "Final Report of the

- National Commission on the Causes of the Financial and Economic Crisis in the United States,” 2011
5. Bank for International Settlements (BIS), “Semiannual OTC Derivatives Statistics,” 2010
 6. IMF report, “Global Financial Stability Report: Containing Systemic Risk and Restoring Financial Soundness,” April 2008
 7. European Central Bank (ECB), “Credit Default Swaps and counterparty risk,” 2009
 8. ECB, “OTC Derivatives and Post-Trading Infrastructures,” September 2009.
 9. Fitch Ratings, “Derivatives: A Closer Look at What New Disclosures in the U.S. Reveal,” July 2009
 10. ISDA, “2002 Master Agreement and ISDA 1992 Master Agreement,” 2002
 11. ISDA, “ISDA Margin survey,” 2009
 12. High-Level Group Report (led by Jacques de Larosière), “On Financial Supervision in the EU,” 2009
 13. G-20 Leaders Statement of the Pittsburgh Summit, September 2009
 14. BCBS, “Basel III: A global regulatory framework for more resilient banks and banking systems,” June 2011
 15. Joint ESMA/EIOPA/EBA Discussion Paper, “On Technical Standards on Risk Mitigation Techniques for un-cleared OTC Derivative,”
 16. Deloitte Report on OTC derivatives and the new cost of trading
 17. BIS, “Triennial Central Bank Survey, Foreign Exchange and Derivatives Market Activity,” December 2007
 18. Deutsche Börse Group, “The Global Derivatives Market: An Introduction,” white paper, 2009
 19. The Board of the International Organization of Securities Commissions (IOSCO), “The Credit Default Swap Market Report,” June 2012
 20. Report of the President’s Working Group on Financial Markets (PWG Report):

“Over-the-Counter Derivatives Markets and the Commodity Exchange Act,”
November 1999.