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“Derivatives Markets Regulation”

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Abstract

The paper under the title “Derivatives Markets Regulation” is analysis of past, current and upcoming international regulatory actions and their implications for derivatives markets. The main objective is to show that current international regulatory efforts are successful in detecting, analyzing and resolving certain inadequacies that have developed over the previous years and decades. However, derivatives trading itself poses challenges that cannot be resolved by regulatory agencies alone and require stronger political will and efforts.

After the global financial crisis of 2008/2009 there have been many debates about causes of the crisis. Derivative trading is often mentioned as the main source of troubles. Hence, there is a wide agreement that previous derivative regulation was inefficient and needs to be further developed and upgraded.

Particularly regulatory attention is given to OTC derivatives, as they are considered the major source of systemic risk. Reducing this risk has been the leading preoccupation of international regulators and policymakers. Greater standardization of derivative products, better transparency and improved clearing mechanisms provide incentives for adoption of new rules and increase confidence of market participants in the overall trading process.

Initially, derivative market contribution to the financial crisis is explained, as well as the weaknesses of derivative regulation and some ideas of how to improve upon it. Basic facts about derivative contracts and trading are briefly explained for the better understanding of the subject. Following the analysis of international ET and OTC derivatives regulation, the main regulatory bodies are introduced. Consequences of proposals aimed at improving the trading process are also discussed. The end provides brief summary of international regulation for derivatives market with advantages and disadvantages for future trading and market participants.

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Introduction

In decades behind us, derivative products as financial innovation were celebrated as hallmark and virtue of American-style capitalism. After the financial crisis in 2008 it is not the case anymore. Derivative products, mostly debt obligations and credit default swaps are being criticized by the public, media and policymakers for devastating American and global financial system.

One of the main problems of the banking industry today is derivative regulation, or to be more precise the inability of banks to properly handle derivative trading. Regulators do not have sufficient information about derivative contracts, making it harder for market participants to calculate the risk, resulting in higher bilateral exposures, inefficient collateralization and limiting legal certainty of derivatives. The evolution of derivative regulation is becoming a trend in developed economies, as they stand to lose the most from the increasingly hazardous market environment.

Although there are many causes for the financial crisis of 2008, derivative contracts have played a central role. The financial system and, in particular, its regulatory entities have failed to perform properly, allowing an unstable situation for *“Over-the-Counter derivatives (OTCs) and OTC swaps [that] have a net notional value of approximately \$300 trillion in the United States. That is roughly 20 times the size of the American economy.”*¹ Banks and regulators emphasize different value and function of bank liquidity. On one side, regulators want capitalized banks during systematic financial crisis in order to prevent providing costly bail-outs. On the other side, banks are inclined to write more derivative contracts, leaving them with larger liabilities during systemic crisis.²

Basel III regulatory guidelines, published in 2011, have an aim to strengthen the regulation, supervision and risk management of the banking sector. They should improve the sector's ability to absorb shocks, refine risk management and strengthen transparency and disclosures. After its full implementation in 2019, Basel III will consist of stricter requirements for regulatory capital with a minimum of common equity of 4.5

¹ Commodityonline, 2010, History of derivatives regulation, by Gary Gensler, viewed on 24.02.2014, <http://www.commodityonline.com/news/history-of-derivatives-regulation-culprit-otcs-29636-3-29637.html>

² Forbes, 2013, Derivative regulation-Why does it matter, by Vania Stavrekeva, viewed on 21.02.2014, <http://www.forbes.com/sites/lbsbusinessstrategyreview/2013/09/24/derivative-regulation-why-does-it-matter/>

%, Tier 1 Capital of 6 % and Total Capital of 8%.³ These increased minimum capital requirements target standard bank lending and propriety bank trading instruments, equities and bonds; but the requirements do not prevent banks to shift the risk using derivative contracts, which provide an alternative, cheaper way of risk shifting.

Countries where financial markets have large amounts of capital at their disposal are more likely to use that capital for speculative purposes. They can even use their long acquired reputation as a collateral, as it was the case with AEG. Because of their large size and significant influence in the market, company executives can be reasonably confident that even if the trading with derivatives turns badly the government will be strongly inclined to bail them out, and it will of course have funds to do it.⁴ The unintended consequence of such behavior and expectations is to create a chain of decisions where risk is completely ignored, the system as a whole becomes unreliable and potentially dangerous for all parties involved.

Financial institutions realize that by risking more they have significantly larger profits, and limiting the risk means they simply cannot compete in the market. In essence, riskier behavior carries higher rewards and any other performance will effectively be ignored by the bail-out process. In this way, the risk spreads from one party to another without anybody facing any real danger, thus making derivative trading substantially less risky than it really is.

Lack of normal financial assessment complicates derivative regulation. There are simply no standards that normally apply to other financial products. Even if countries have institutions ready to regulate derivatives trading, lack of transparency makes this task exceedingly difficult. There is simply no way to know all the risks involved. *“The US\$2 billion loss of JP Morgan due to CDS trades in 2012 and the bail-out of AIG are prime examples of why greater disclosure of information is crucial and regulators should put more effort in designing optimal derivative regulation.”*⁵

Large and prestigious institutions can implode through their derivative contracts. Bankruptcy of London Barings on the 26th of February 1995 is a good example.⁶ Bank

³ Bankaustria, 2011, Basel III/CRD IV, CRR, viewed on 22.02.2014, https://www.bankaustria.at/files/110630_Disclosure_Capital_Adequacy_Para_5_OffV_EN.pdf

⁴ Investopedia, 2011, Counterparty risk, viewed on 24.02.2014, <http://www.investopedia.com/articles/optioninvestor/11/understanding-counterparty-risk.asp>

⁵ Forbes, 2013, Derivative regulation-Why does it matter, by Vania Stavrekeva, viewed on 21.02.2014, <http://www.forbes.com/sites/lbsbusinessstrategyreview/2013/09/24/derivative-regulation-why-does-it-matter/>

⁶ Benhamou E., 2003, Swaps Strategy, Goldman Sachs International

losses exceeded its capital by hundreds of millions of dollars through unsanctioned dealings of one of its traders. He took a long position in the Nikkei 225 futures and the risk had no real financial justification. Lack of transparency and failure to act if any wrong doing was noticed prevented any serious corrective action. It is notable that the problem was not limited to the bank itself but also extended to market regulators of the Singapore future exchange (SIMAX).⁷

However, derivative contracts play an important role in the financial market. By developing derivatives, banks and corporations create possibility to secure and spread the risk and in a relatively short period earn large amounts of money. This makes derivatives tempting even if occasionally substantial losses occur.

As a response to the crisis, financial authorities are introducing new regulations and rules for the derivatives market. Dodd-Frank Act in the USA, and Basel III accord in the EU, are the two main attempts to provide the desired oversight. Dodd-Franks Act goes as far as to prohibit federal bailouts for some of the companies trading with derivatives.⁸ Both sets of rules contain incentives to move OTC derivatives towards central clearing and request more transparency in transactions involving derivatives.

⁷ Prmia.org, 2009, Baring Brothers short version, viewed on 15.04.2014, http://www.prmia.org/sites/default/files/references/Baring_Brothers_Short_version_April_2009.pdf

⁸ Dodd-Frank Act, SEC. 716

1. Derivative Contracts

Derivative is a security where price is derived from the price of an underlying asset.⁹ Derivative contracts are agreements to perform exchanges at some point in the future.¹⁰ Pricing of derivatives is not arbitrary, but it is directly linked to the price of underlying assets. There are many types of underlying assets used in derivative contracts, stocks, currencies, bonds etc. Commodities and raw materials can also be used for this purpose (e.g. gold, milk, coffee). Accordingly, the value of contracts is derived from underlying stock index and exchange rates. Thus, the changes in these values affect the price of the derivative, so transactions of derivatives can be used to reduce the risk of unpredictable price fluctuations of underlying assets.

From the financial point of view derivatives are primarily used to decrease the exposure to risk especially in long term contracts.¹¹ Decrease in risk for a participant is achieved by spreading the existing uncertainty among other participants in the trading. Economic efficiency is increased as associates can unbundle individual risk components and trade them in an effective way. It is notable that although risk, and corresponding volatility in spot market, can be reduced, the opposite is also possible and the speculations risk can also be increased.

Various types of derivatives traded in financial markets can be divided in two different types of contracts: forwards and options. *Forwards* are contracts which give owner the right to buy or sell an underlying asset at a specific date in the future for the price specified at present. Buyer pays the money at contract expiration date, but not before, and seller gives the underlying asset. *Options* are also contracts to buy underlying asset in the future at the agreed price, but unlike forwards buyers are not under obligation to buy or sell the asset. Obligation of the seller depends on the buyer's choice whether to exercise the option.¹²

⁹ Mehta D., 1998, Derivatives, McGraw-Hill, pg. 2

¹⁰ Whaley R., 2006, Derivatives: Markets, Valuation and Risk Management, John Wiley & Sons Inc., pg. 3

¹¹ Schachter B., 1997, Derivatives, Regulation and Banking, Elsevier Science, pg. 252

¹² Whaley R., 2006, Derivatives: Markets, Valuation and Risk Management, John Wiley & Sons Inc., pg. 4

1.1. Forwards

Forward contract obliges the seller to deliver agreed underlying asset and the buyer to pay the specified amount of money.¹³ The contract contains information on price per unit of the underlying asset, number of units to be delivered and date when the transaction takes place.

Forward contract can contain *delivery settlement*, a clause that when the contract expires, seller has to deliver and buyer must take the delivery of an underlying asset. Such deliveries, mostly for the physical goods, can be costly. To avoid costs, derivative contracts can also specify *cash settlement*, when the money replaces the actual asset. In such contracts, when they expire, difference between a spot price and a forward price has to be paid. When the spot price is higher than the forward price, the short pays the difference in the cash to the long. If the spot price is lower, the long pays the difference to the short.

Fixed prices in forward contracts can be used for speculation. For example, a farmer who is concerned about a wheat harvest over the coming years can sell his wheat with the forward contract. In this way he can set the price at present and reduce the risk of price deviation in the wheat market. Correspondingly, if the price of wheat in the market at expiration date is higher the farmer is obliged to sell the wheat at this price.

This is an example of *long position* in a forward contract. A person who is going to buy the wheat is exercising the *short position*. The short and long positions of the forward contract are illustrated in the figure below.

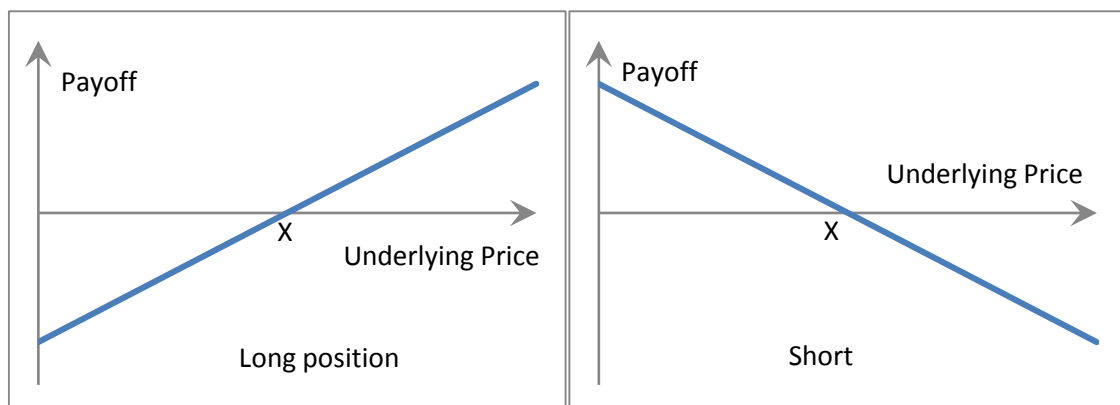


Figure I: Short and long position of forward contract

Source: Investorsoftware, 2001, <http://www.investorsoftware.net/InvestorPrimer/Derivatives.html>

¹³ Keber, C., M.G. Schuster, 2004, Finanzwirtschaft: Eine Einführung in die Finanzwirtschaft der Unternehmung, 2.Aufl

Payoff from the long position is given by the formula $P = S - X$. Where S is the spot price of an underlying asset and X is the delivery price. Payoff from the short position is given by the formula $P = X - S$. It is obvious that one person's gain is another person's loss.

Speculation is not the only motive for using forward contracts. They can also be used in *hedging*, too. In many cases manufacturers enter forward contracts with customers. For example, coffee producer obligates to deliver 10 000 kg of coffee to a retail buyer for the fixed price of 10 euros in the December. He has the possibility to lock the cost of coffee production for December by taking forward contract with his coffee supplier. But he is not speculating because the price of coffee can fall, he is rather hedging the price risk.¹⁴

Likewise, speculation or hedging could be reasons to sell a forward contract.

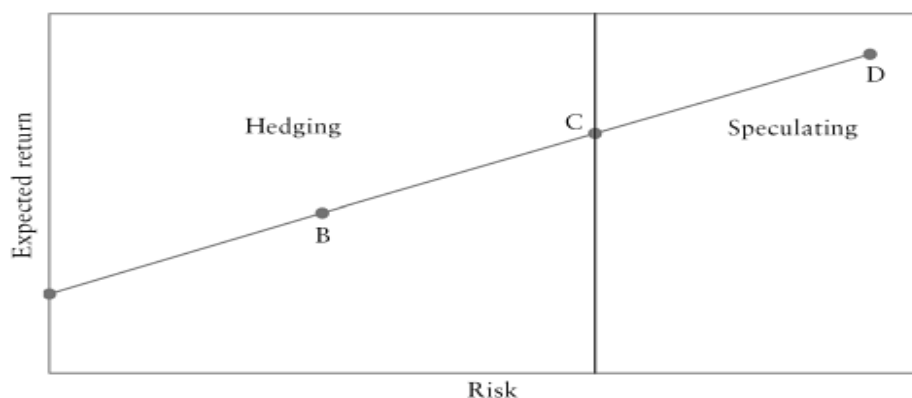


Figure II: Hedging and speculating in forward contract

Source: Whaley R., 2006, *Derivatives*, pg. xiii

The market participants who are seeking to reduce the risk are called *hedgers* and market participants who want to increase risk are called *manipulators*.¹⁵

1.2. Options

Options are another group of derivative contracts. Options are defined as contracts where underlying assets are traded at exercise price, at some date in the future; the difference from forward contracts is that option provides the right, but not the obligation,

¹⁴ Whaley R., 2006, *Derivatives: Markets, Valuation and Risk Management*, John Wiley & Sons Inc., pg. 5

¹⁵ Chance D. and Brooks R., 2013, *Derivatives and Risk management*, 9th Edition, North Western, pg., 15

to buy or sell underlying assets (“a *contingent claim*”)¹⁶. The right to buy underlying assets within specified time, at agreed price, is called a *call option*. The right to sell underlying assets is a *put option*.

For example,¹⁷ an investor expecting a stock price from 25\$ to 30\$, over a three month period, has an option to buy a certain number of stocks at the expected price if he pays a contract premium. If the price rises above the expected, the investor makes a profit, minus the paid premium, and the other party is at a loss. If the investor does not exercise the option (i.e. the stock price drops) the only loss is the amount of money paid as a premium at contract initiation.

Options can be classified as follows¹⁸:

- European purchase option: the right to buy an underlying asset at particular date T for the price of X
- European sales option: the right to sell an underlying asset at particular date T for the price of X
- American purchase option: the right to buy an underlying asset at any date $t < T$ for the price of X
- American sales option: the right to sell an underlying asset at any date $t < T$ for the price of X

These basic types of options in the business literature are referred as *plain-vanilla options*. If the options cannot be described as one of the previous four types they are called *exotic options*.

Since options provide the right to one party, choices of another are limited by contract. As a result another party receives a premium in the form of option price. The party holding the rights is called the *option holder*. The seller of the option is the *option writer*. Options or rights have the value that never becomes negative.

¹⁶ Whaley R., 2006, Derivatives: Markets, Valuation and Risk Management, John Wiley & Sons Inc., pg. 7

¹⁷ Whaley R., 2006, Derivatives: Markets, Valuation and Risk Management, John Wiley & Sons Inc, pg. 8

¹⁸ Keber, C., M.G. Schuster, 2004, Finanzwirtschaft: Eine Einführung in die Finanzwirtschaft der Unternehmung, 2.Aufl

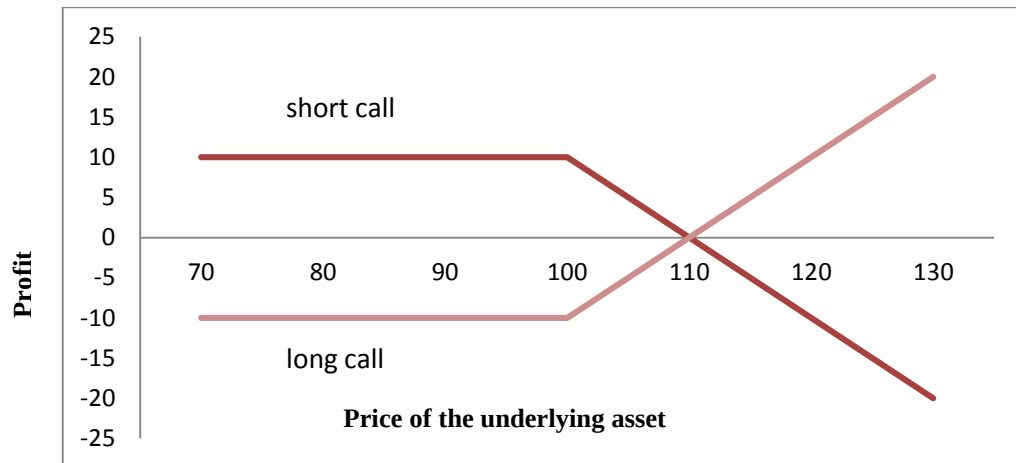


Figure III: Purchase Option

Source: Hull J., 2009, Optionen, Futures und andere derivative, 7.Auflage, Pearson Studium

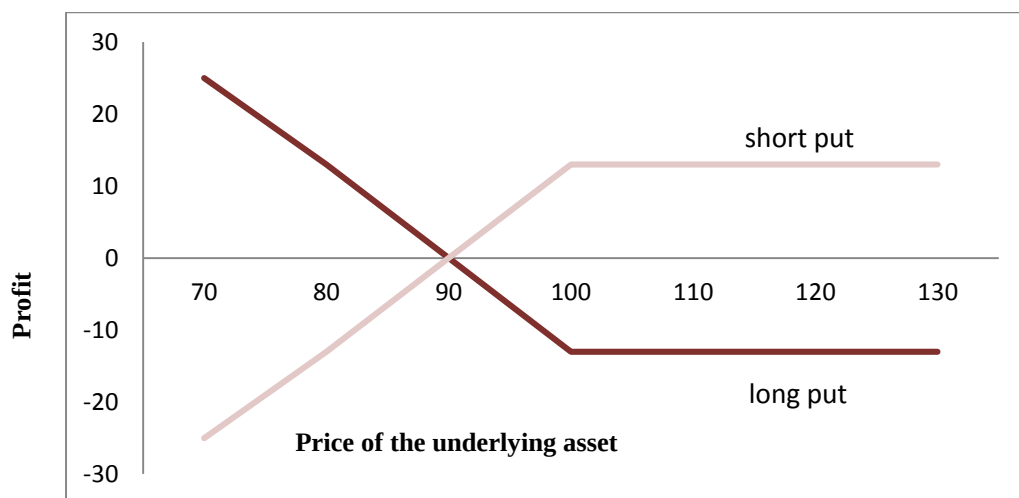


Figure IV: Sales Option

Source: Hull J., 2009, Optionen, Futures und andere derivative, 7.Auflage, Pearson Studium

1.2.1. Exotic options

The options that cannot be classified as plain-vanilla are called exotic options. Some of them are¹⁹:

- *Asian options*: option value at the exercise date is derived from the average price of an underlying asset. The price can be calculated by using arithmetic or geometric average.
- *Barrier option*: the right to sell or buy is gained when the price/rate of an underlying asset reaches specific limit, a barrier.
- *Basket option*: payments depend on more than one underlying asset. An example is a portfolio made of different stocks.

¹⁹ Keber, C., M.G. Schuster, 2004, Finanzwirtschaft: Eine Einführung in die Finanzwirtschaft der Unternehmung, 2.Auflage

- *Exchange Options*: owner of the right has a possibility to exchange one commodity with another.
- *Rainbow options*: gives owner the right, within specific time, to choose between different underlying assets he is going to buy or sell.
- *Chooser Option*: owner can choose, within specific time, whether to purchase or to sell. It is also called *as-you-like-it* option.
- *Compound options*: underlying asset is also the option. These are options on options, with the following possibilities: call on call, call on put, put on call and put on put.
- *Quanto-Options*: they give a possibility to turn off the currency risk in the case the option and underlying asset are denominated in different currencies. Payoff from the quanto-options depends on the value of an underlying asset and the price of the asset in different currency, but not on the difference in the currencies.

1.3. Market Participants

Participants in the derivative market can be divided into following 3 categories:

- Arbitrageurs
- Speculators
- Hedgers

1.3.1. Arbitrageurs

Arbitrageurs aim to achieve profit and eliminate the risk of investing in the market by consistently taking long and short positions in a single period of time, with identical or valuable contracts, where profits and losses can cancel out.²⁰

A special case of arbitrage where buying and selling are performed in two different markets is defined as space arbitrage; buying and selling in one market but not at the same time is defined as time arbitrage.²¹

²⁰ GEOJIT BNP PAPRIBAS, 2013, viewed on 28.03.2014.,
<http://www.geojitbnpparibas.com/derivatives/participants-in-a-derivative-market>

²¹ Farmer K. and Thomas V., 2008, Internationale Ökonomik, 3.Auflage, pg. 152

Arbitrage is very similar to speculation. The difference is that arbitrageurs believe that other speculators and the stock market in general will fail to evaluate asset prices properly.

1.3.2. Speculators

Speculators, in contrast to arbitrageurs, inherently take risky positions based on the expected price changes.²² Speculators achieve profits only if their predictions come true, and have no inherent protections if they fail.

1.3.2.1. Speculation on unilateral market development

Speculators are present in every market. Derivatives and especially options permit certain strategies of speculation. For example, a speculator guesses that share A is undervalued, has a strategy to buy share A today, and sell it when in the future, when the option price is higher and compensated through the market. Of course there is a risk that that expectations of the speculators will not match the market situation. However, this risk can be eliminated when speculators take only one position in the option.

1.3.2.2. Speculation in markets with side movements

Besides speculation with rising or falling shares prices, where the option holder is in a better position depending on how far the price of the underlying asset differs from the base price, there is also a speculation through simple derivative contracts of less volatile underlying assets, when the option is to be sold.

Through the selling of specific contracts, option writer receives option price and hopes that any losses from the option will be covered by that price. Possibility for successful speculation is higher if the price of an underlying asset is less volatile. An example is a so-called *covered call*, where the short-call is combined with the long position of underlying assets.

²² GEOJIT BNP PAPRIBAS, 2013, viewed on 28.03.2014,
<http://www.geojitbnpparibas.com/derivatives/participants-in-a-derivative-market>

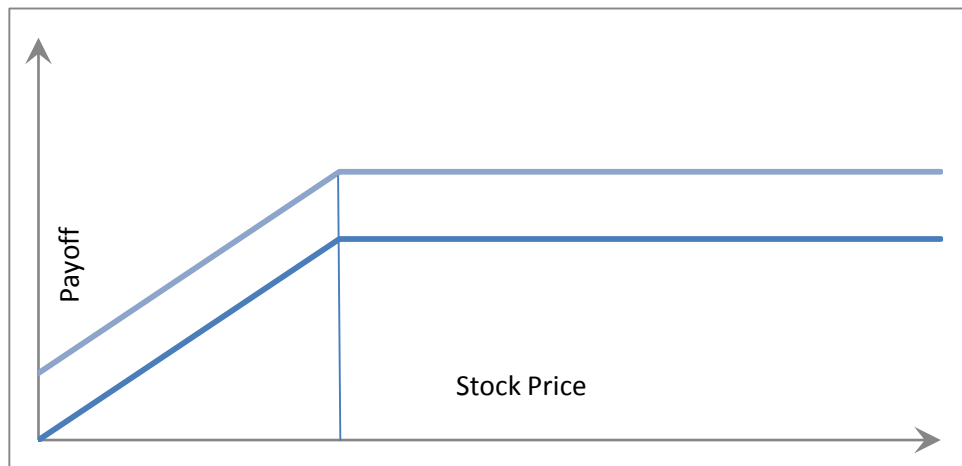


Figure V: Covered call at expiration

Source: Thismatter, 2014, viewed on 02.04.2014, <http://thismatter.com/money/options/option-strategies.htm>

Regardless of how high the stock rises, the covered call writer's maximum payoff will be the strike price plus the premium received for the call.

1.3.2.3. Speculation on specific market expectation

With the help of option strategies, by taking different option positions, there is a possibility to speculate on highly volatile prices, with extreme price rises and falls. For example combined payoff with the purchase position and the sell position in identical underlying asset and with identical base price. Such option strategy is shown in the graph below.

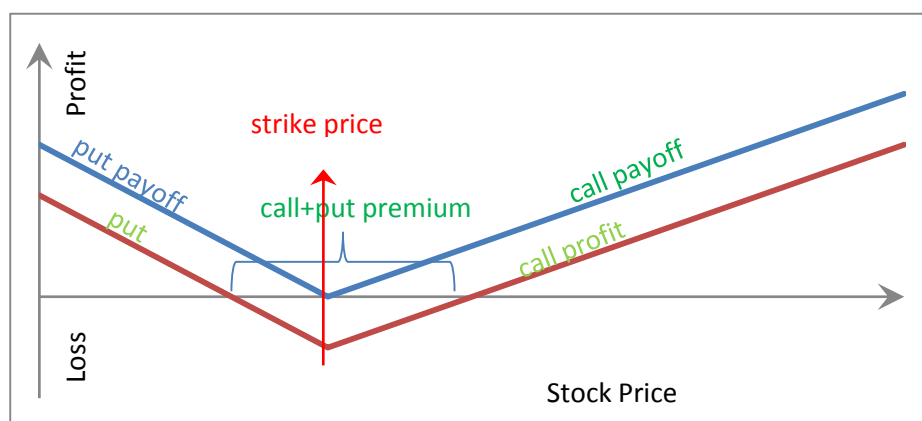


Figure VI: Long Straddle

Source: Thismatter, 2014, viewed on 02.04.2014, <http://thismatter.com/money/options/option-strategies.htm>

1.3.3. Hedgers

Hedgers, investors exposed to market asset fluctuations, insure themselves against risk resulting from derivatives contracts through different strategies.²³ In doing so, they

²³ GEOJIT BNP PAPRIBAS, 2013, viewed on 28.03.2014., <http://www.geojitbnpparibas.com/derivatives/participants-in-a-derivative-market>

usually take different positions in a contract minimizing the risk of loss from potential price fluctuations. However, minimizing of risk can have negative impact on profitability of contracts. So there is a constant dynamic of trying to increase gains and minimize a chance for a potentially catastrophic loss. What makes derivatives different from other hedging strategies is not simply a disregard for risk, but often very weak or non-existent connection to underlying assets used by investors to cover their positions.

2. Derivatives Regulation

Derivatives can also be categorized by way they are traded. Generally they can be traded in two ways: at the organized exchange or over-the-counter. Hence, they can be divided into *exchange traded* (ET) or *over-the-counter* derivatives (OTC). The organized exchange provides mechanisms for administration oversight, and narrows the possibility of trades and contracts that can be performed. OTC market lacks many of the rules and regulations, allows the interested parties to keep a large amount of information confidential and allows for greater creativity of contracts. Framework for trading of ET derivatives is provided by the law, while the OTC derivatives follow the guidelines of voluntary arrangements (private ordering) mostly through the entity called International Swaps and Derivatives Association (ISDA).²⁴

Three different points need to be considered when thinking about derivatives regulation. From the economic viewpoint it can be argued that regulation of derivatives is needed to prevent market failure and protect market participants from possible jeopardy.²⁵ The academic research aspect of derivatives focuses on their role in increasing volatility of spot markets, although this view is far from uniform. The third point of consideration when dealing with derivatives is the lack of transparency and knowledge of potential problems, such as insufficient capital and absence of proper internal controls.

It is very important to track derivative positions for the purpose of proper internal control and capital requirements. Constant and rapid changing in the positions creates a formidable obstacle when tracking them. In practice, this can only be done by banks themselves, counting of self-imposed restrictions and practices. If the banking personal is unable or unwilling to follow even these self-imposed norms it is very hard for an outsider to do anything about it. Potential investors can be completely clueless about the risks they might encounter.

In this situation is not possible to overstate the importance of self-control or proper behavior, even if nobody is watching. However, rules and regulation without outside participation can remain wishful thinking.

²⁴ Carruthers G.B., 2013, Diverging derivatives: Law, governance and modern financial markets, *Journal of Comparative Economics* 41, 386-400

²⁵ Board J., Goodhart C., Power M. and Schoenmaker D., 1997, *Derivatives Regulation*, London School of Economics, London, England UK, pg. 1

One of the solutions to problem with high-risk unregulated OTC derivatives trading is to limit the banks to trade only with safe assets, so called narrow banking proposal.²⁶ The long term effect of such decision would be to stabilize the financial system. But in the short-term the effect would be highly destabilizing for all those derivatives without solid backing in assets and liabilities. Therefore increasing oversight and collecting more useful data to evaluate risks remains the preferred way to the problems in derivative markets.

For the exchange traded derivatives, credit risk may be reduced through margins. These margins are measured by the clearing house without the need for additional regulation. Clearing house is a financial institution responsible for “settling trading accounts, clearing trades, collecting and maintaining margin monies for derivatives and securities transactions.”²⁷ This proposal can be successful if implemented internationally. Otherwise it would be possible for investors unwilling to accept the changes to simply move to a new market in another country.

2.1. Differences between ET and OTC Derivatives

OTC derivatives contracts are made as bilateral agreements between the contracts parties, so that condition and execution are directly influenced by them.²⁸ This implies, at the same time, that all conditions are negotiable. In contrast, terms of ET contracts have less flexibility and are, in most cases, already determined. Main disadvantages (or advantages for some parties) of OTC derivatives are non-existence of the formal market and risk minimizing resources.

Participants in the OTC market are mainly commercial and investment banks. Commercial banks are minimizing risks in the OTC markets through credit risk improvements and transparency. For example, third parties might provide guarantees for some or both of the parties, collateral is paid in advance or collateral is partial. Apart from it, many trade associations and Derivative Policy Group of six major US investment houses formulated “best practices” for trading in OTC market, making them a possible standard for derivatives trading in the near future.

²⁶ Ghosh S., Saggarr R., 1998, Narrow Banking: Theory, Evidence and Prospects in India, Economics and Political Weekly, Vol. 33, Num. 19, pg. 1091

²⁷ Investopedia, 2014, Clearing House, viewed on 27.05.2014,
<http://www.investopedia.com/terms/c/clearinghouse.asp>

²⁸ Randall D., 2002, The Structure of OTC derivatives Market, The Financier, Vol. 9

Trading in ET derivatives is supervised by *clearing houses*, therefore making clearing house solvency major factor for the success of the exchange. A clearing house typically requests traders to deposit an initial margin, when the price change margin calls are made. Most of a clearing houses have agreements with transaction participants to share a loss, and reserve a fund available if a member fails and does not have margins high enough to cover their positions. In the example of Barings, other participants did not suffer any losses because the initial margins were prepared. Thus such margins are very helpful as a protection against potential losses in case of failure.

In order to reduce counterparty risk, traders of OTC derivatives could be required to share some characteristics of ET derivatives. OTC derivatives would become more expensive, with increased capital requirements, but they would be subjected to a fairer appraisal process and would become standardized.²⁹ One example of OTC-ET similarity are the flex options, defined as customized equity or index option contracts³⁰. However, it is unlikely that complete standardization of the OTC market is possible. Some of these contracts are completely unsuitable for exchange trading, some customers could still prefer a degree of customization, and others could simply leave to locations with no changes in the OTC market.³¹

Since the 1990's the ET and OTC markets developed extensively in the number of trades as well as in a total capital turnover. ETs initially limited to commodities, options and futures increasingly started to handle more innovative financial products. Electronic trading helped the rapid expansion of this market. Although the OTC derivative market is much younger, it has expanded faster and grew larger, with the total number of trades surpassing the ET market in 2008 by a factor of 10.³² It is hard to estimate the amount of money bound to derivatives, but it certainly makes the value of real economy minute by comparison.³³

Differences between OTC and ET derivatives became significant during the financial crisis initiated by Lehman Brothers collapse. By that time (2008), it was the largest

²⁹ Mayer M., 1998, The Asian Disease: Plausible Diagnoses, possible remedies, Jerome Levy Economics institute of Board College, No. 44, on Folkerts-Landau and Steinherr, 1994

³⁰ Cboe, 2014, FLEX Options, viewed on 27.05.2014, <http://www.cboe.com/Institutional/flex.aspx>

³¹ Schachter B., 1997, Derivatives, Regulation and Banking, Elsevier Science, pg. 240

³² Carruthers G.B., 2013, Diverging derivatives : Law, governance and modern financial markets, Journal of Comparative Economics 41, 386-400

³³ Globalresearch, 2012, Financial implosion, viewed on 15.04.2014, <http://www.globalresearch.ca/financial-implosion-global-derivatives-market-at-1-200-trillion-dollars-20-times-the-world-economy/30944>

collapse of a bank. The bank traded in OTC and ET derivatives and was a leader in certifying *Credit Default Swaps* (CDS). “Credit risks were certified as *Collateralized Debt Obligations* (CDO's), converted to securities, sold to buyers and classified as a riskless.”³⁴ In this way toxic assets brought chaos to OTC market, and failure of Lehman Brothers became a global problem. Market traders, ignorant and worried about undisclosed obligations, suspended their activities and many asset holders of Lehman securities were “unable to extricate themselves from their positions once the bankruptcy court imposed a judicial stay”.³⁵ It was significant that this order did not extend to the ET market. The better regulated ET market handled the situation much better, but in the long term, despite the difference it cannot be completely separated from the unregulated OTC market. It is not unusual for traders to hold various derivatives in both markets and to use the assets in one market as the leverage in another. Therefore, in the end the problem cannot be limited.

The OTC and ET derivative markets responded differently to the financial crisis. Precarious state of the OTC market in times of crisis resulted in new ideas how to organize the trading, primarily to reduce risky behavior and improve stability. Increased cost of a new format predictably decreased profits and were opposed by various financial players.³⁶

It is clear that the biggest difference between the two markets is the number of regulations participants can expect and have to obey. Political lobbying, in this case, is not only limited to influencing lawmakers when writing new laws. The OTC market participants resisted to any kind of firm and enforceable public law that could regulate their domain, which basically keeps the market as a lax and arbitrary financial structure.

ISDA used somewhat predictable rational that no regulation is better than the bad regulation. Even talking about changing the rules of the game could crash the OTC market and a regulatory solution would in fact become a source of the problem.³⁷

³⁴ Diepresse, 2010, 09/15- Die Lehman Pleite, viewed on 16.04.2014, http://diepresse.com/home/wirtschaft/finanzkrise/503750/915-die-LehmanPleite_Was-damals-wirklich-geschah?gal=503750&index=9&direct=&_vl_backlink=&popup=

³⁵ Carruthers G.B., 2013, Diverging derivatives : Law, governance and modern financial markets, *Journal of Comparative Economics* 41, 386-400 on New York Times July 15, 2009, p. B7

³⁶ Duffie D., 2010, Presidential Address: Asset Price Dynamics with slow moving capital, *The Journal of finance*, Vol. LXV, No.4, pg. 1237-1267

³⁷ Carruthers G.B., 2013, Diverging derivatives : Law, governance and modern financial markets, *Journal of Comparative Economics* 41, 386-400

The entire trading process, in various stages differs significantly between the two types of the derivatives³⁸:

- *Trade Execution*

With ET derivatives the execution follows a well-rehearsed and designed protocol, where two parties agree to a transaction. The OTC trades can be executed in various manners, with the rules established internally between the participants.

- *Trade confirmation*

ET contracts confirmation is registered and follows the rules of a particular exchange as pre-determined by the exchange. The OTC derivatives use clearing houses to confirm the trades performed, if they are standardized (Markit Wire, DTCC's etc.), while non-standardized contracts have their own way of confirming transactions.

- *Clearing*

The ET derivatives are cleared within generally accepted, and relatively short period of time. This leaves little doubt as to who is the real owner of a contract at a particular time. In contrast, the OTC derivatives can be cleared even if a significant time after transaction has past. This way owners and risk carriers involved in trades, as well as their liabilities, can be effectively hidden from the public view and assessment.

2.2. Role of Internal Control

In general, market oversight can be performed by outside institutions and rely on internal system of checks and balances. Increased role of self-regulation and its shortcomings have been a subject of analysis in the last couple decades.³⁹ From contemporary perspective it might be surprising to know that internal controls actually played a greater role in financial asset trading on the British market in the 1980s. The Barings failure is a good example of how a firm confidence in the internal system of regulation discouraged outside regulators from questioning suspicious activities of some of its traders. There was a generally accepted belief that internal controllers had sufficient influence and authority to discover and rectify any wrongdoings of traders that would lead to corrective actions. As we know now, this thrust was misplaced. Attempts to increase the significance of outside independent auditors were resisted. Opponents argued that greater external insight into the bank activities and reports

³⁸ Commission of the European Communities, 2009, Ensuring efficient, safe and sound derivatives market, pg. 9

³⁹ Schachter B., 1997, Derivatives, Regulation and Banking, Elsevier Science, pg. 240

would decrease the amount of useful information expressed in them. In essence, more external oversight translated into less transparency. Problems of internal control have well known remedies. It should be sufficient to that the execution of the transaction and its record keeping are performed by distinct persons. This seems as a simple solution, but the example of Barings provides a telling confirmation. When a failure of Barings was analyzed over conspiracy involving personnel from different divisions of the bank. People not directly involved in dubious transactions simply believed the information they are receiving is properly evaluated, and by doing nothing to question the accuracy of the data received continued to propagate the problem.

Simple solutions, unfortunately, are not easily translated in practical actions. Rather than having a truly distinct people or entities, like external auditors, reform of control techniques ends up in a series of non-binding suggestions. A good example is the Cadburys Code also known as “Code of Best Practice” written by the British Cadbury Committee.⁴⁰ It is not surprising that board directors of companies show reluctance in reporting how they run their businesses and particularly if they encounter existing and potential controversies.

Even when external controls are performed the ability to conduct a meaningful audit can be significantly curtailed. External audits by regulatory agencies provide a powerful tool to encourage financial institutions to conduct their affairs properly. However, in the UK external audits come at predetermined dates and banks have an ample time to prepare for the visits. This provides a good opportunity to disguise known business violations. In the US there is a history of stronger supervision of financial institutions by the Federal Reserve and OCC (Office of the Comptroller of the Currency).⁴¹ It was not unusual until the 1980s, to have surprised visits to financial institutions by the regulators. Currently most audits and examinations of the banks are scheduled at specific intervals, special attention is paid only to those banks considered risky.⁴² The Basel Committee on Banking Supervision and the Technical Committee of the International Organization of Securities Commissions (IOSCO) provides international

⁴⁰ The committee of the financial aspects of corporate governance and Gee and Co. Ltd, 1992, Report of the Committee on The Financial Aspects of Corporate Governance, Code of best practices, pg. 58, point 4.5

⁴¹ White N. Eugen, 1992, The Comptroller and the Transformation of American Banking, 1960-1990, pg. 4

⁴² Federal Deposit Insurance Corporation, 2014, Report of Examination Instructions, RMS Risk Management Manual of Examination Policies

guidelines for supervision of the derivatives trading by financial institutions.⁴³ The guidelines contain materials that should help companies in recognizing and avoiding unsound behavior and practices.

Internal control procedures and policies are obvious and simple to set up, but difficult to implement properly.⁴⁴ A practice to provide bonuses based on short term gains encourages risky decisions by staff and managers. Even if companies suffer long term loss, even bankruptcy, those responsible collect considerable recompensation.

Additionally, operating regulations valid in one country or location may be different and unenforceable in another. Even if state agencies show lack of enthusiasm or ability to perform sufficient controls, it is in the interest of stock holders to insist on the introduction of additional mechanisms, allowing them to preserve their investments.

2.3. Regulators

Derivative market is complex and steadily growing. Globalization and greater importance of international institutions and organizations helped in this process. As national rules become less important, it is much easier to perform financial transactions without having to account for specificities of individual markets.

2.3.1. Separated banking

The Banking act of 1933, better known as the Glass-Steagall Act, made a clear distinction between investment and commercial banking in the USA.⁴⁵ The author disputes a widely accepted idea that the banking separation is the result of public pressure to minimize risk and speculation in the financial markets. He provides facts that contradict usual explanations of why the Glass-Steagall Act became law. Commercial loans can, and in fact in many situations are, more risky than investments and securities. Furthermore, there is no real conflict of interest that bankers could misuse a private assets as investment opportunities. In fact, making bad choices would hurt banks severely as dissatisfied customers could withdraw not only their investment funds but also money from their private accounts. Perhaps, the strongest misconception that the author wants to elucidate concerns the supposed a public

⁴³ Bis.org, 2014, Basel Committee on Financial Supervision, viewed on 30.05.2014, <http://www.bis.org/bcbs/index.htm>

⁴⁴ Schachter B., 1997, Derivatives, Regulation and Banking, Elsevier Science, pg. 241

⁴⁵ Tabbarok A., 1998, The Separation of Commercial and Investment Banking: The Morgans vs. Rockefellers, The Quarterly Journal of Austrian Economics vol. 1, no. : 1-18

interest in preventing banking crisis. In reality, the Glass-Steagall Act is a direct consequence of fight over financial interest by the two powerful lobbies, the Rockefeller and the Morgan's. The passage of this act gave a distinct advantage to one group over the other.

Debate over banking practices has a long history in the United States and the origins of the Glass-Steagall act can be found in National Bank Acts of 1863.⁴⁶ It is customary to attribute public opposition to big business as one of the main reasons for regulation in banking. The banks, on the other hand, resented this intrusion into their profit margins. By the 1920s, as profits from commercial lending decreased, it became clear that investment banking is much more important for those financial institutions that wanted to keep a competitive edge. In 1978 the Bankers Trust, a commercial institution, became involved in investment banking; the noncompliance with the Glass-Steagall Act led to legal action but the company was not sanctioned for its violation.⁴⁷ Having to set up a subsidiary and limiting its investment earnings to five percent of their entire revenue were the only restrictions the bank faced. This case in effect redefined a section of the Glass-Steagall Act. As profits from the investment markets continued to increase, the five percent limit expanded to ten percent in 1988 with the corresponding increase in the variety of securities the banks could trade with. The slow retraction of the Glass-Steagall Act continued and in 1996 the Federal Reserve allowed US commercial banks to have subsidiaries with as much as 25 percent of the revenue coming from the trade in securities.⁴⁸ These changes that regulated banking industry weakened the separation between commercial and investment banking to such a degree that all major banks in the United States were in the 2000s universal banks.

It is interesting to note that the financial crisis initiated by the Lehman Brothers collapse in 2008 is not attributed to the lack of separation between the commercial and investment banking as much as the existence of the conflict of interest.⁴⁹ Banks combining commercial and investment portfolios create more powerful lobbying groups and are less likely to be concerned for their commercial customers. Another issue being

⁴⁶ Casserley D., Härtle P and McDonald J., 2010, Should commercial and investment banking be separated?, McKinsey&Company, pg. 7

⁴⁷ Casserley D., Härtle P and McDonald J., 2010, Should commercial and investment banking be separated?, McKinsey&Company, pg. 9

⁴⁸ Pbs.org, 2003, The long demise of Glass-Steagall Act, viewed on 01.06.2014, <http://www.pbs.org/wgbh/pages/frontline/shows/wallstreet/weill/demise.html>

⁴⁹ Casserley D., Härtle P and McDonald J., 2010, Should commercial and investment banking be separated?, McKinsey&Company, pg. 9

discussed is a presence of a moral hazard, where the deposits insured by public institutions (e.g. FDIC) could be lost in uncertain undertakings.

One reason why separated banking is held in such high esteem in the United States is an experience of a stable banking sector, free of major crisis or collapses for over four decades since 1933. However, in the financial crisis of 2008 not only the investment but all the other categories of banks defaulted. Therefore recent financial problems cannot simply be explained by the existence or insufficient separation of different banking sectors.

2.3.2. Universal banking

Universal banks combine commercial banking and securities trading within the same organization.⁵⁰ In the UK, although without direct restriction, universal banking was not significant until 1980s. Germany has extensive tradition of universal banking. Considerations of the pros and cons of the universal banking are strongly influenced by the experience of financial crisis and as such often miss educated understanding and observation.

Supporters of universal banking dispute the idea of conflict of interest and claim better transparency and responsibility to the customers. Universal banks have greater variety of financial assets and this provides them with a significant advantage.

In the European Union the main concern is the protection of insured deposits in case of bank failure.⁵¹ The main objective of the proposal is to increase capital requirements and decrease bank exposure to trading that is considered to be of particularly high risk (e.g. derivatives).

2.3.3. International Regulators

Basle Committee on Banking Supervision of the Bank for International Settlements (BIS) and the International Organization of Securities Commissioners (IOSCO) are the main global organizations for regulatory issues. BIS was founded in 1930 as the first international financial institution.⁵² Over time the bank expanded its monitoring and research capabilities, allowing it to gather, analyze and publish variety of data in

⁵⁰ Casserley D., Härle P and McDonald J., 2010, Should commercial and investment banking be separated?, McKinsey&Company, pg. 3

⁵¹ Likkianen E., 2012, High-level Expert Group on reforming the structure of the EU banking sector, Final Report, pg. 4

⁵² Bis.org, 2014, History Overview, viewed on 01.06.2014, <http://www.bis.org/about/history.htm?l=2>

economics and finance. IOSCO, established in 1983, is an international organization for discussing and establishing norms in securities trading.⁵³ IOSCO in partnership with other international forums and organizations attempts to define, improve and support the existence of common standards for securities. It members more than 120 regulators and other security market participants like stock exchanges, financial regional and international organizations. The main objective is to protect investors and increase their confidence in the markets, by establishing rules allowing safe and transparent exchange of information, as well as detection and redress of market wrongdoings.

It is easier for international banking regulators to find a common viewpoint, in contrast to securities regulators, who face much more systemic risk. BIS and IOSCO consolidated their regulatory efforts, but could not find an understanding on the question of capital requirements for market risk. The two organizations continued to work together in establishing and publishing recommendation for regulatory bodies in an effort to properly assess risk in the derivatives market.

IOSCO approved previously endorsed Windsor Declaration of 1995. Regulators from 16 different countries, at the meeting in UK, discussed issues such as the protection of customer positions, default procedures and regulatory cooperation in emergencies.⁵⁴ The declaration addressed issues relevant for derivatives trading and subsequently reached an agreement. It requires supervisory institutions to enhance transparency, improve risk management, to decrease misuse of funds and call for the availability of reserve funds to guarantee liquidity in case of default.

2.3.4. National Regulators

Language and cultural barriers complicate the realization of mutual efforts at the global level. National efforts should be considerably easier to achieve. But the situation is not simple as that. In the case of Barings flow of information from Singapore to London may have been understandably challenging to a certain degree. But the lack of communication between the Securities and Futures Authority (SFA) and Bank of

⁵³ Iosco.org, 2014, About, viewed on 01.06.2014, <http://www.iosco.org/about/>

⁵⁴ Cftc.gov, 2014, Windsor Declaration, US Commodity Futures Trading Commission, viewed on 01.06.2014, http://www.cftc.gov/International/InternationalInitiatives/oia_windsordeclaration

England is surprising.⁵⁵ It was the duty of SFA to supervise Barings securities Barings Securities and of Bank of England to monitor the Barings Bank.

In the case of Barings two issues of insufficient cooperation between national regulators can be demonstrated. Firstly, Barings provided different information to the Bank of England and to the SFA, as funding for positions at Barings futures Singapore. Differences were considerable. Had the information about the earnings differences between the SFA and Bank of England been compared, it would have been easy to find the discrepancy. Secondly, Bank of England, even as the crisis was unfolding, made no attempt to contact the SFA and acquire their capabilities. Therefore, even with the tools available, nothing was done to actually employ them in practice.

⁵⁵ Schachter B., 1997, *Derivatives, Regulation and Banking*, Elsevier Science, pg. 243

3. ET derivatives

Formally regulated derivatives trading in the USA begins with the establishment of Chicago Board of Trade (CBOT) in 1848.⁵⁶ At that time Chicago started to prosper as an exchange focus for agricultural and manufactured goods. Commodities traders could join CBOT and take advantage of its commercial standards, out of court settling of differences and a formal framework of organized futures transactions. Members of CBOT caught in breaking rules could be subjected to paying penalties, or in more serious cases, a banishment from the exchange. Commodities trading expanded after the opening of the Chicago Mercantile Exchange (CME) in 1898.

Futures trading encountered federal government regulation in the Commodity Exchange Act passed in 1936; only parties that could physically fulfill terms of their contracts were allowed to participate in futures trading. The law banned all other derivatives swaps.⁵⁷ The policymakers intended to recognize legitimate trading and banned purely speculative exchanges. The act provided legal basis to restrict manipulation of commodity prices and protect people and entities unaware of internal dealings of CBOT and CME. In this way the law provided a clear distinction between trading and gambling in the securities market for commodities.

This arrangement did not face a significant challenge until 1970s. When President Nixon withdrew gold backing for the US dollar futures contracts encountered a serious problem. The value of the dollar and all commodities expressed in it could be very volatile, while the contracts required a stable price. Therefore, some traders decided to denominate their contracts in more stable foreign currency. The CME lobbied for this solution, although it was unclear as to how it would be regulated. Trading in financial derivatives expressed in foreign currency decoupled the actual commodities from futures contracts. The way for growth in derivatives trading was wide open.

A new law of 1974 formed a new regulatory agency Commodity Futures Trading Commission (CFTC) and gave it a mandate to regulate new contracts. The Commission could now regulate and non-commodity based futures. The first non-

⁵⁶ Carruthers G.B., 2013, Diverging derivatives : Law, governance and modern financial markets, *Journal of Comparative Economics* 41, 386-400

⁵⁷ Law.cornell.edu, 2014, 7 U.S. Code, Chapter 1, commodity exchanges, viewed on 18.04.2014, <http://www.law.cornell.edu/uscode/text/7/chapter-1>

commodity contract received go-ahead in 1975.⁵⁸ Six years later a new set of rules came into force allowing new options on futures contracts. Another novelty for 1981 was a settlement of futures contracts in cash, clearly showing it is no longer necessary to have goods for contract payment at the time of maturity. This contract executed at the Chicago Mercantile Exchange used the Eurodollar, making futures dependent on interest rates of deposits held outside the Federal Reserve jurisdiction. In fact, a speculation prone financial instruments had a major influence on the commodity trading. Passage of Commodity Futures Modernization Act in the year 2000 is a normal continuation in the trend of increased flexibility and decreased requirements for parties trading on the futures market. New agreements could be settled under less demanding conditions, encouraging greater risk taking.

A contract changes in the derivatives market was not influenced by policy only. Development and increased use of IT technologies a greatly simplified electronic trading. Although some participants of the CBOT and CME expressed reluctance to entirely move away from the open-outcry to the computerized trading. As European challenger in the form of Eurex arrived in Chicago, domestic institutions had to follow suit in order to stay competitive. Increased speed and turnover of transactions create a new layer of difficulty when it comes to rule enforcement. Regulators can still do their job, but it is obvious to everybody that supervision can easily lose some of its capabilities.

This does not mean that the diversified risk can became excessive. Traders have a layer of protection, as both buyers and sellers are subject to an appraisal of their financial situation. The existence of margins serves as a promise of payment even if a counterparty cannot cover all of its liabilities at a particular instance in time. In practical terms, margins, in combination with transparency of transactions regulated by the overseeing body, creates an environment of confidence for the parties involved. Therefore, it is not surprising that the collapse of Lehman Brothers and the unknown and unaccounted liabilities market associates faced, did not have such a profound influence on the functioning on the CME. Clear standardization and enforcement of rules created less risky market environment that was both perceived and was in inherently less risky.

⁵⁸ CFTC.gov, 2014, CFTC History, viewed on 18.04.2014,
http://www.cftc.gov/About/HistoryoftheCFTC/history_1970s

3.1. Exchanges and regulators

Traders continuously argue that regulation of derivative markets is one-sided, criticizing regulators for having a disproportionally significant control over derivatives trading process. Market participants claim that fewer rules for derivatives improve the market situation in general. Nonetheless, many analysts agree that rule enforcers and market traders are linked in an intricate way and that regulators direct impact on the market is not as strong as some believe or claim.⁵⁹

It was actually advantageous to the CME to be monitored by a single department rather than an arcane commission from the far away Department of Agriculture. The foundation CFTC showed the relevance of futures market and that it deserves regulatory attention. Thus, the futures exchange started to look and function more like the New York Stock Exchange (NYSE). Evolution of the futures trading required a politically independent supervisory body open and responsive to market participants concerns. Moving away from the reach of the Department of Agriculture had an additional benefit of severing to futures link to the actual assets traded. Futures exchange could now be differentiated from the stock exchange only by the goods bought and sold, becoming a self-regulatory and fully matured system with the institutions necessary to promote its rapid development.

The futures market created and maintained good connection with CFTC and Congressional committees in charge. The CME successfully balanced increased exposures to market volatility and dangerous with greater political protection and representation. In the market crashes that followed the exchange had the same treatment and financial safeguards and backup enjoyed by the NYSE.

3.2. ET Derivatives and Risk

Derivatives are instruments that financial entities use for protection against various risks.⁶⁰ This investment strategy can be defensive, but at the same time it may increase the risk through the speculation with the assets involved. The risk can be estimated by evaluating its volatility, speculation, liquidity and knowledge.

⁵⁹ Carruthers G.B., 2013, Diverging derivatives : Law, governance and modern financial markets, *Journal of Comparative Economics* 41, 386-400

⁶⁰ Parliament.uk, 2010, The future regulation of derivatives markets: is the EU on the right track? - European Union Committee Contents, viewed on 10.05.2014, <http://www.parliament.the-stationery-office.co.uk/pa/ld200910/ldselect/ldcom/93/9305.htm>

3.2.1. Volatility

Professionals and amateurs alike, believe that increased use of derivatives influences the degree of market volatility, but this conviction is not supported by corresponding facts; indeed this is not the case.⁶¹ Market experts who study this question concur that market volatility is not related to greater adoption of derivatives.⁶²

Volatility is dependent on the trading process, but this relationship is not intrinsically unfavorable. It is quite normal as new reports and tips circulate the market, volume and frequencies shifts. However, if market movements are independent of any meaningful insight there is an excessive and potentially destabilizing volatility. Lower fees in derivatives markets encourage traders to process and respond to information faster than the corresponding asset market. One of the consequences of this approach is greater adaptability in the price discovery, leading to increased market performance.

Moreover, the empirical evidence shows future contracts may well promote market stability, as it happened in the city of London after the crash 1987.⁶³

3.2.1.1. Speculation

Commonly accepted idea that speculation introduces volatility in the futures market is often misunderstood. Derivatives traders betting on excessively unpredictability of prices expose themselves to spot traders who take considerably lower price positions. This can substantially limit the advantages of unsound wagers.⁶⁴

3.2.1.2. Liquidity

There are also different opinions that derivatives market has negative impact on the cash flow of the asset market.⁶⁵ According to those opinions, lower fees in the derivatives market tend to increase the frequency of trading and encourage investors to migrate from the higher cost asset markets. This would in turn lead to capital flight, increase operating costs and in general make market assets less profitable. A problem with this theory is that a large derivatives market (e.g. U.S. market) does not adversely

⁶¹ Robinson G., 1993, The Effects of Future Trading on Cash Market Volatility: Evidence from the London Stock Exchange, Working Paper, Bank of England, pg. 21

⁶² Board J., Goodhart C. and Sutcliffe C., 1992, Equity and Derivatives Markets: Linkages and Regulatory Implications

⁶³ Robinson G., 1993, The Effects of Future Trading on Cash Market Volatility: Evidence from the London Stock Exchange, Working Paper, Bank of England, pg. 22

⁶⁴ Schachter B., 1997, Derivatives, Regulation and Banking, Elsevier Science, pg. 252

⁶⁵ Schachter B., 1997, Derivatives, Regulation and Banking, Elsevier Science, pg. 252

affect other market participants. One might argue if such adversity is present, traders would prefer to migrate to more friendly market environments, and in doing so limit the existing inequality.

3.2.1.3. Knowledge

How to make good investment grade derivative remains perhaps the most controversial issue.⁶⁶ Clients have sued their financial experts and argued in court their money has been invested in dubious activities. In contrast, derivative traders assert the final decision about the investment is made by the clients and it is up to them to be knowledgeable about the choice they do.⁶⁷

An example of this situation is the case against the Bankers Trust, a major investment company of the 1990s. They were one of the leaders in the marketing of innovative financial products like derivatives. Many companies suffered big losses and sought a legal remedy for perceived financial scams and deception. The plaintiffs asserted the Bankers Trust willfully provided false information about the real financial value and liabilities of contracts they offered to buy. Consequently, they could not make a fully informed choice about their investments and Bankers Trust was the responsible party for fabricating the evidence. The case was settled out-of-court, but it underscored once again the importance of transparency.

It is possible that better regulation needs to be written and enforced to prevent cases like this one can contend that the law already provides a solution.⁶⁸ Suitability rule (11.2) from the SIB is part of the business rules published by the SIB and SRO's:⁶⁹

“A firm should not make recommendation to a (private customer)...to purchase, sell or exchange any investment...unless it has reasonable grounds for believing that the transaction is suitable for that (customer) having regard to the facts known, or which reasonably ought to be known, to the firm about investment and as to that (customer)’s other investments and his personal and financial situation.”

⁶⁶ Schachter B., 1997, Derivatives, Regulation and Banking, Elsevier Science, pg. 253

⁶⁷ IITK, 2007, Khatkale S., Case Study on Banker's Trust, viewed on 26.05.2014, <http://www.iitk.ac.in/infocell/announce/convention/papers/Colloquium-03-Swati%20Khatkale%20final.pdf>

⁶⁸ See 60

⁶⁹ SIB Conduct Rules, 1989, 5.01(1)

It further lead to following principles⁷⁰:

- *“A firm should act with due skill, care and diligence...”*
- *“A firm should seek from customers it advices...any information about their circumstances and investment objectives which might reasonably be expected to be relevant in enabling it to fulfill its responsibilities to them”⁷¹*

As legal solutions for transparency and investment concerns in derivative contracts already exists it is superfluous to add a new set of rule.

3.2.2. ET derivatives and internal market linkages

As discussed previously, derivatives can significantly influence trades in the spot market.⁷² Free flow of information or selective insider trading is an issue that often garners attention in the media. Important, sometimes crucial trade information is revealed to the market hours or even days after they occur.⁷³ Naturally there is a potential for some associates to take an advantage of this situation. This risk factor increases cost of doing business for everybody in the market.

Another example of concerns with ET derivatives trading that originates in the spot market is so called algorithmic trading. Large and high frequency trades taking increasingly higher proportion of stock market transactions, are a legitimate tool in contemporary market practice. However, if a company decides to conduct a considerable business transaction with its shares it could be misinterpreted. Apprehensive buying and selling could be completely unrelated to the actual performance of company and its shares. Any belief arising in such a situation could become a self-fulfilling prophecy. In this way a decision to for example diversify portfolios could be construed as a major decrease in the value of the company. To deal this problem so called “Sunshine trade” has been developed. It refers to open discovery and acknowledgment of large scale purchases and sales to give traders sufficient a warning and chance to evaluate the consequences.⁷⁴ Again, clear and timing access to information for all interested parties is the key to prevent unfair advantages. The idea could not be applied in the United States as the announcement of ones attention

⁷⁰ Paul Nelson, Capital Markets Law and Compliance: The Implications of MiFID, pg.21

⁷¹ SIB, Statement of Principle 2 and 4, 1990

⁷² Schachter B., 1997, Derivatives, Regulation and Banking, Elsevier Science, pg. 253

⁷³ Board J., Sutcliffe C., 1995, The Effects of Trade Transparency in the London Stock Exchange

⁷⁴ Investopedia, 2014, Sunshine trade, viewed on 27.05.2014,
<http://www.investopedia.com/terms/s/sunshinetrade.asp>

to engage in a business transaction before it is actually performed is considered a breach of market standards.⁷⁵ In the UK there are different ideas how to approach this problem, so one could say that “sunshine trading” has limited applicability.

⁷⁵ Schachter B., 1997, *Derivatives, Regulation and Banking*, Elsevier Science, pg. 254

4. OTC Derivatives

Exponential growth of OTC derivatives outpaced the ET derivatives market, as shown by ISDA, in the data collected in the period from 1987 until 2009.⁷⁶

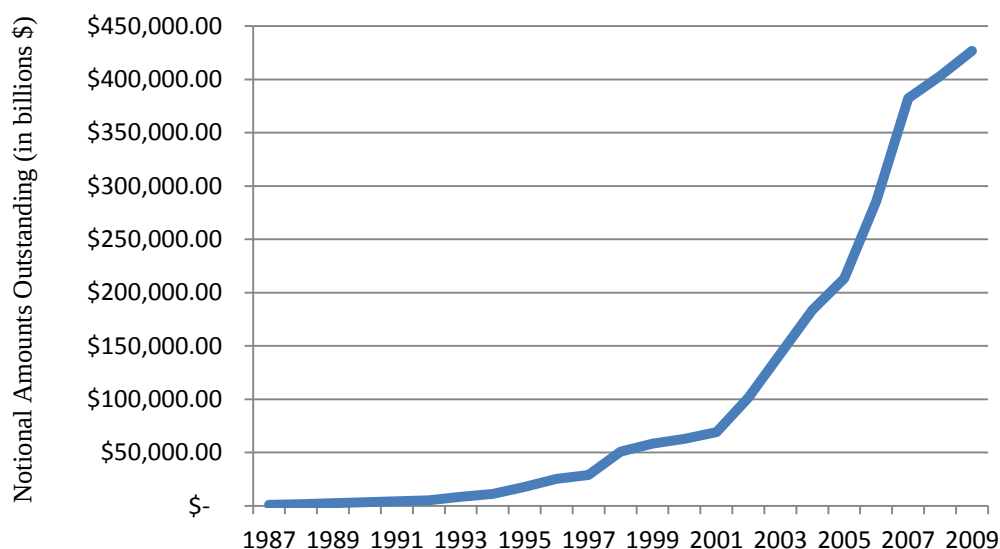


Figure VII: The Growth of OTC market from 1987-2009
Data from ISDA OTC Market Survey

In 1986 total value of ET derivatives exceeded the OTC market. Two decades later, even as ET market increased substantially, it was dwarfed by ten folds larger OTC derivatives. The CME and CBOT innovative financial instruments, disconnected to the underlying assets, followed the example of other financial institutions that have turned to trading and underwriting activities. The new market opened in 1981 with the World Bank-IBM mediated by Salomon Brothers.⁷⁷

At the beginning, bank assisted parties involved in direct swap transactions. Few years later, the commercial banks became participants in the swap deals, providing credit and consequently acquired certain risks, but still could not be considered independent players in the market. As the banks started evaluating and providing information on derivatives trade to interested parties they could now be considered full participant in the derivatives market. New role offered greater possibilities for investment and profitability, at the same time exposing banks to previously unfamiliar risks. Their market share continued to increase in parallel with multiplication of additional financial products. Derivatives were no longer limited to currency swaps, but expanded to

⁷⁶ Isda.org, 2014, Market Surveys, Market Surveys Data 1987-2010, viewed on 02.06.2014, <http://www2.isda.org/functional-areas/research/surveys/market-surveys/>

⁷⁷ Flavell R., 2010, Swaps and Other Derivatives, 2nd Edition, John Wiley & sons Ltd., pg. 5

interest rates, swaps, stocks, bonds and finally reaching credit default swaps. The role of the broker, like the one Salomon Brothers performed, evolved to position of a dealer and in the end full market participant. This development conveyed new administrative and regulatory requirements, forcing banks to keep increasing amount of information out of the public eye. These so called off-balance-sheet activities meant that huge risks could be compiled without proper evaluation. At the same time the banks needed more access to credit and insurance against the risk and this was achieved through more of the same financial instruments-OTC derivatives.

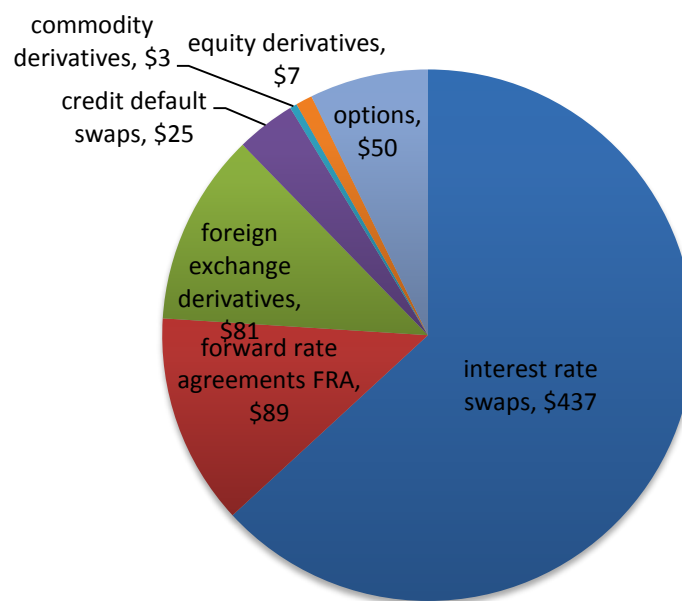


Figure VIII: Notional Outstanding OTC derivatives in 2013 (in \$ trillions)
Source: ISDA, 2014, Value of Derivatives, ISDA's 2014 Brochure Final

The importance of OTC derivatives originate from their exponential rise and the sheer size of the market in comparison to other financial contracts. Figure VIII gives an overview of the OTC derivative market. According to ISDA statistics of the OTC derivatives overall obligations reached \$693 trillion in 2013. The expansion continued regardless of the financial crisis. Banks have an opportunity to make large financial gains providing strong incentives to be actively engaged in OTC. Trading of commercial banks in the USA, for example, exceeded 22 billion dollars in 2009.⁷⁸

Darby differentiates two types of OTC derivatives, privately negotiated forwards or privately negotiated options.⁷⁹ Commodity or foreign exchange contracts, forward rate

⁷⁸ Capelle G., 2010, Are the derivatives dangerous? A Literature Survey, International Economics 2010/3, nom. 123, pg. 67-89

⁷⁹ Darby M., 1994, Over-The-Counter Derivatives and Systematic Risk to the Global Financial System, pg. 3

agreements (FRA), interest rate, commodity or equity swaps are given as examples of forwards. Privately negotiated options include: commodity, currency, equity, FRA, swap, and bond options, and caps, floors, and collars. Variety of financial instruments, their adaptability and diversity, can be tailor-made to match desires and financial interests of different clients. These clients can be private investors, public traded companies, state entities etc. Of course, they have an option to use ET derivatives where higher level of standardization translates into higher operating expenses.

Huge increase in total assets traded at the OTC market should not be confused with a high number of traders involved. In fact the opposite is true; vast majority of trades is performed by a relatively minor group of traders, usually connected to big banks.⁸⁰ Banks try to spread the risk while making money for their clients, but two major problems are easily recognized in a market with limited number of major participants:

- If one of the banks becomes insolvent, there is a risk of large number of OTC trades defaulting, with serious consequences for other market traders. And because market is not regulated the other traders would have no knowledge of risk they are exposed to.
- Few banks with many clients translates into maintenance and clearing of huge number of non-standardized agreements. Consequently market flow can be seriously impeded.

To illustrate the danger, in 2003 only seven banks controlled 96 percent of total assets in the OTC market, with more than 550 commercial banks.⁸¹ These large banks, if faced with unwanted regulation can easily transfer their operations among different markets, looking for those with the least amount of supervision. Companies such as J.P. Morgan, Goldman Sachs, Schrodgers and Nat West already have presence in various markets and the ability and sophistication to make the transfers relatively easy to do. All these attributes provide them with the significant leverage against any attempts to impose unwanted controls over their business transactions with OTC derivatives.

Only those regulatory norms agreed through a professional association of OTC market traders (ISDA) has a real chance of being implemented. The norms generally lack

⁸⁰ Carruthers G.B., 2013, Diverging derivatives : Law, governance and modern financial markets, *Journal of Comparative Economics* 41, 386-400

⁸¹ Stulz M., 2004, Should we fear Derivatives?, *Journal of economic perspectives*, Vol. 18, Num. 3, 2004, pg. 173-192

stringency and, although ISDA includes many entities interested in improving efficiency of the OTC by increasing transparency and managing risk.⁸² The ISDA Master Agreement aims to simplify and provide better legal framework for parties negotiating OTC contracts.⁸³ Multiparty exposure is reduced through netting, which enables parties to determine each other's risk in case of default. Therefore, OTC have legal consequences and intrinsic risk reducing advantage. The value of the Master Agreement increases with the number of areas and territories where it is legally accepted. By 2013 the ISDA Master Agreement has been accepted in most of the countries with major OTC markets.

In contrast to the exchanges, the OTC market is not regulated and centralized, it lacks transparency and, since interactions of sellers and buyers are not open to wider financial community, it is hard to determine market value of financial products offered.⁸⁴ It is therefore difficult to see how much the transactions are actually worth and to calculate the profitability of the OTC contracts for the dealers. Customers cannot compare expenses and profits among different banks, allowing them to keep larger share of income from successful investments and to withhold information from loss generating ventures. Inadequate supervision makes acknowledgeable risk assessment a real issue.

Absence of regulation in the OTC market is conducive to introduction of novel ideas and financial devices. It is not necessary to seek permission from a regulator to engage in a previously unknown or untested way of conducting business in the market. Traders are under constant pressure to be inventive and stay ahead of competition. For example, a mechanism of Credit Default Swaps (CDS) was developed as an insurance against default.⁸⁵ There is nothing special about this provision, however a lack of regulation allowed OTC dealers to offer CDS not only to those people who have vested financial interest and are at risk of default, but to anybody who wanted to take part in this kind of transaction. In essence, this could be an equivalent to taking an insurance option against someone else's car or a house. As more serious consequence of the same type of speculation is an example of insuring against default of Greek obligations; the insurance option was open to anybody who was interested in making money from

⁸² Isda.org, 2014, About ISDA, viewed on 02.06.2014, <http://www2.isda.org/about-isda/>

⁸³ ISDA Brochure, 2013, Global derivatives: more change ahead

⁸⁴ The Financial Crisis Inquiry Commission, 2011, The Financial Crisis Inquiry Report, pg. 46

⁸⁵ Carruthers G.B., 2013, Diverging derivatives : Law, governance and modern financial markets, Journal of Comparative Economics 41, 386-400

a default. Therefore, for some market players default was actually a profit-making result. CDS offer a total disconnect between assets and asset derived financial instruments. A more extreme example of such CDS is Ordinary Collateralized Debt Obligation (OCDO).⁸⁶ As a consequence, a profit becomes related not to the asset value but to the outcome of a certain event, like a debt default.

Improved transparency and risk management remain the two major aims of improved regulation for OTC markets. In the EU there are voices calling to achieve these aims through greater standardization of financial products that can be offered; similarly, introduction of Dodd Frank Act in the USA is intended to provide a better arranged and safer market environment.⁸⁷

4.1. Transparency

Standardization of ET derivatives provides market participants with statistics allowing investment and risk evaluation. Lack of standardization for OTC derivatives makes them more opaque for investors. However, regardless of the level of transparency and standardization, both markets have a long way to go to achieve generally acceptable clarity and stability. Traders and supervisory bodies alike are not fully satisfied with a market situation as it stands now.⁸⁸

Markets in Financial Instruments Directive (MiFID) provides the basis for complying with EU standards when engaged in derivatives trading.⁸⁹ Further refinement of the directive by the EU legislative and executive institutions led to MiFID II and new Regulation- MiFIR.⁹⁰ Instructions on how to carry out proposed directives are almost written in full and when the final version is complete, sometime in 2015, it will be ready for operation. It is expected the proposed changes outlined in MiFID and MiFIR will increase transparency, offer better safeguards for investors and consequently reduce unnecessary risks. Also, market supervisors should receive greater authority to

⁸⁶ Gorton B., 2010, Slapped by the Invisible Hand: The Panic of 2007. Oxford University Press, New York, pg. 105

⁸⁷ CESR, 2010, Technical advice to the European Commission in the context of MiFID review, Standardization and Organized Platform Trading of OTC Derivatives

⁸⁸ Commission of the European Communities, 2009, Ensuring efficient, safe and sound derivatives market, pg. 10

⁸⁹ MiFID II/MiFIR series, 2014, Transparency and reporting obligations

⁹⁰ The Council of European Union, 2014, DIRECTIVE 2014/.../EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of on markets in financial instruments repealing Directive 2004/39/EC of the European Parliament and amending directive 2011/61/EU on Alternative investment Fund managers and Directive 2002/92/EC on insurance mediation

regulate previously out of reach areas of the market. All these changes are expected to increase efficiency and improve the market environment.

Improved transparency can be achieved in two ways: investors can be provided with more information of transactions in which they engage, and regulatory bodies, in turn, should find it easier to reach and appraise data collected from market activity.

The directive states that collected data can be refined and subject to additional scrutiny using tools such as Approved Publication Arrangements (APAs), Approved Reporting Mechanisms (ARMs) and Consolidated Tape Providers (CTPs).⁹¹

According to European Infrastructure Regulation No 648/2012 on OTC derivatives and Central counterparties and Trade Repositories (EMIR) market transactions related to derivatives have to be documented, archived and readily available for regulators.⁹² Archived information not only allows regulators to evaluate if the proper procedures were followed, but it also permits legislated bodies to have an open way to spot and correct potential problems before their magnitude becomes too great or too difficult to resolve.

4.1.1. Transparency on positions

Numerous providers of statistical data related to derivative analysis and evaluation are readily available and they do in fact provide a considerable amount of useful information for potential investors. The institutions involved include Bank of International Settlements (BIS), International Swaps and Derivatives Association (ISDA) as well as the British Bankers Association (BBA) and Comptroller of the Currency (OCC) in the USA.⁹³ However, if one looks at the structure of the data provided there are certain details that simply do not add up to a comprehensive description of the situation in the market. The OCC, for example, classifies the information it monitors and provides based on a particular set of derivatives products, but it does not associate derivatives (e.g. CDS) with particular risks and parties involved. As a consequence potential investors cannot be fully informed and confident

⁹¹ MiFID II/MiFIR series, 2014, Transparency and reporting obligations

⁹² Kapitalmarktrect-im-internet.eu, 2014, Regulation No 648/2012, viewed on 06.04.2014, http://www.kapitalmarktrect-im-internet.eu/en/Areas%20of%20Law/Capital_Markets_Law/European_Law/78/Regulation_EU_648_2012.htm

⁹³ Commission of the European Communities, 2009, Ensuring efficient, safe and sound derivatives market, pg. 10

about their undertakings and thoroughly consider reasonable foreseeable risks. Additional information does not have to be hidden from the public view, in fact it can be easily available, but to a different kind of supervisory body that is in charge and can be found in a different jurisdiction; an example can be BBA's cognizance of information useful to Asian regulators. Also, banks can be required to provide one set of data on its investments in one country and a different set or format in another place. This leaves a large grey area for investors when they need to evaluate their risks, even if no fraudulent transactions are intended or carried out. This kind of problem requires international consideration and action.

4.1.2. Price transparency

In the OTC market, independent dealers or market data vendors such as Bloomberg, Thomson/Reuters, Interactive Data or DAS provide market participants with various price data points.⁹⁴ These data are sufficient to form an estimated prices at which traders are willing to engage in a transaction. The prices are then used to calculate potential risk the investors might face in the future.

Transparency after the trade in the OTC market is very limited. The chronic issue remains the fact that it is unclear who is fully aware of the actual price paid and received by parties forming a derivative contract, consequently it is possible to assume that some sources of information might be cognizant, while the others deliberately or unwillingly disseminate incorrect information.

Therefore, the issue of transparency is justifiably and extensively discussed when non-standardized markets are concerned.⁹⁵ There is a general agreement that as a matter of principle the level of transparency in the trading process should be elevated. There is, however, a disagreement as to how exactly this can be achieved and who should be in charge and regulate the proceedings. Opponents of greater oversight assume that investors would see their profit margins decrease and lose interest in further participation in such a market. Proponents of increased oversight assume that the market environment would be more favorable to all participants in general. It would be less likely for all investors to infer that some dealers (e.g. major banks or trading

⁹⁴ Otcmarkets.com, 2014, Market Data Vendors, OTC Markets Group Inc., viewed on 06.04.2014, <http://www.otcmarkets.com/services/market-data/market-data-vendors/overview>

⁹⁵ Commission of the European Communities, 2009, Ensuring efficient, safe and sound derivatives market, pg. 11

houses) could have an unfair advantage by having a privileged access to information about price formation and risks involved.

Level playing field and appearance of propriety becomes especially important in times of financial crisis and Committee of European Securities Regulators (CESR) is making an effort to increase transparency of derivative transactions.

4.1.2.1. Transaction reporting

MiFID's section 3, titled on Market Transparency and Integrity, Article 25 states that greater insight of the trading process is necessary to preserve market integrity.⁹⁶

“Member States shall require investment firms which execute transactions in any financial instruments admitted to trading on a regulated market to report details of such transactions to the competent authority as quickly as possible, and no later than the close of the following working day. This obligation shall apply whether or not such transactions were carried out on a regulated market.

The competent authorities shall, in accordance with Article 58, establish the necessary arrangements in order to ensure that the competent authority of the most relevant market in terms of liquidity for those financial instruments also receives this information.”

The intent of this article, seems to be, to introduce a partial reporting requirement. It extends some rules and regulations present in standardized markets to the OTC market, while at the same time keeping a considerable section of that market free of any reporting obligations. This is an attempt to create a hybrid solution that can mitigate the problem of potential abuses without undertaking a difficult job of resolving the essential issues of unregulated OTC market. CESR is fully aware of the limitations the hybrid reporting requirement offers as is evident in its decision to curtail potential fraudulent activity by forming an additional Task Force in charge of limited data collection in the OTC market.⁹⁷ The Article 25 of MiFID shows a trend of greater control when OTC derivatives are directly connected to standardized contracts and their underlying assets. The next step would be to elevate transaction reporting from an elective to a compulsory commitment.

⁹⁶ The European Parliament and the Council of European Union, 2004, Directive 2004//39/EC of the European Parliament and of the Council on markets and financial instruments, Article 25 (3), pg. 45

⁹⁷ Commission of European Communities, 2009, Consultation Document: Possible initiatives to enhance the resilience of OTC Derivatives Market, pg. 8

4.1.3. Counterparty Risk

Risk evaluation and division among parties in a derivative contract is a major question that does not have a satisfactory answer. This counterparty risk appears simple enough if there are only two parties bound by a short term contract. The issue becomes exponentially more complex as the number of the parties involved increases and the contracts duration is prolonged. It is possible for one contract associate to be aware about the position of the other about the position of other to whom there is a direct financial connection, but to be in a complete darkness about the positions of other associates of the same contract without a clear financial pathway.

It is not possible to be fully insured that every person or an institution in this financial network is able and ready to fulfill its obligations when needed. This is of course related to insufficient transparency and oversight that is preferred by certain participants in the OTC market. Also, prices of underlying assets can move in unpredictable ways and create an additional stress for multiple contract participants at the same time. Therefore it is important to have a Central Counter Party (CCP) to be able to handle all these contingencies without causing contract over extension.⁹⁸

4.1.3.1. Bilateral Clearing

Bilateral trading operates according to risk disclosures described by ISDA's Master Agreement for OTC markets. This agreement has been enhanced in 1994 by Credit Support Annex (CSA) defining collateral insurance for parties engaged in securities trading.⁹⁹ The Annex regulates how each party should inform the other about the potential risks of the contract that is to be formed and the collateral included. In 2013 Standard Credit Support Annex has been published, a move toward greater standardization by classifying transactions according to the same "currency type".¹⁰⁰ Ideally, and this is still not mandatory, risks and collaterals would be expressed in a single, easy to understand currency. Increased standardization resolves potential discrepancies that might arise if unconventional agreements are desired by one of the

⁹⁸ Commission of the European Communities, 2009, Ensuring efficient, safe and sound derivatives market, pg. 17

⁹⁹ Isda.org, 2014, Credit Support Annex Users Guide, viewed on 06.06.2014, <http://www.isda.org/publications/isdacredit-users.aspx#crd>

¹⁰⁰ Isda.org, 2014, Latest News, viewed on 06.06.2014, <http://www2.isda.org/news/isda-publishes-2013-standard-credit-support-annex-scsa>

sides, therefore bringing tools of bilateral clearing, namely collateral, in accordance with other segments of cleared OTC market.

4.1.3.1.1. Collateral provisioning

Collateral provisioning is based on the open access to the information about the changes in value of the contract over time. This information should be available to all contract participants as well as to the public. Public access opens a possibility to monitor contract exposures and, profits and losses encountered by the participants. Consequently, performance of each party can be evaluated and corresponding risk assessment of failure to fulfil the contract can be made. This allows the party exposed to react in time to prevent a default, for example, by asking another party in contract for an advance, or by canceling another party's exposure in return. This mechanism preserves the overall integrity of multiple contracts between the parties, canceling each other claims if unnecessary bankruptcies, and preventing temporary exposures that could be much more damaging if the entire net of contracts were to break from a single failure. This is called cross-margining. The web of contracts is connected not by a single inflexible thread, but through more or less intricate financial greatly increasing the resilience and preventing temporary risks from becoming a terminal problem.¹⁰¹

4.1.3.1.2. Collateral provisioning in practice

ISDA margin surveys are a major source of information about bilateral provisioning.¹⁰² Comparing the survey data from 2013 and 2014 it is possible to see a 14 percent drop of collateral flow. This is a consequence of increased transparency and standardization, limiting the choice of collateral options and obeying previously existing but non-binding regulation.

¹⁰¹ Culp C., 2010, OTC cleared derivatives: Benefits, cost and implications of the Dodd-Frank Wall Street Reform and Consumer Protection Act, Journal of Applied Finance, Issue 2, pg. 5

¹⁰² ISDA Margin Survey 2014

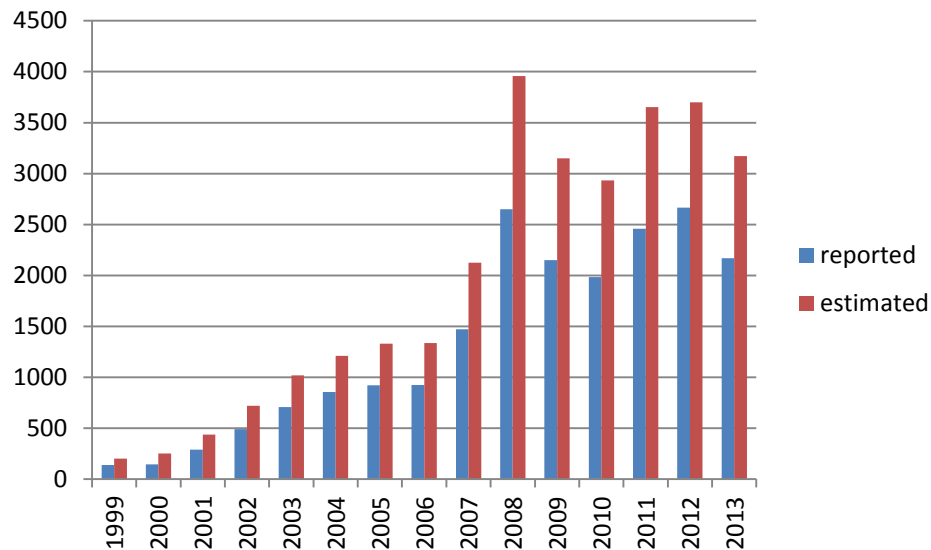


Figure IX: Collateral in circulation for OTC derivatives 1999-2013 (\$ billions)
Source: ISDA Margin Survey 2014

It is estimated that no major changes occurred in the structure of the collateral with cash and government securities making approximately 90 percent of the total collateral.

Majority of the registered 113 155 collateral agreements were written in accordance with ISDA rules. Other collateral agreements, amounting to a little over 12 percent of the total, refer to bespoke agreements, long-term confirmations and regional specific agreements.

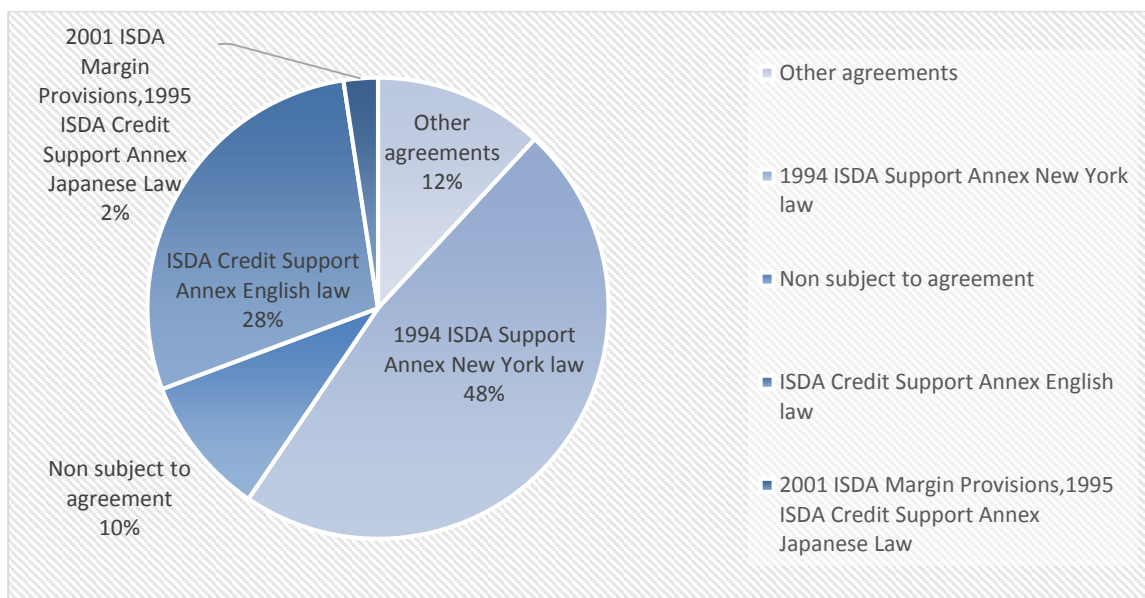


Figure X: Composition of active bilateral agreements in 2013
Source: ISDA Margin Survey 2014

4.1.3.1.3. Portfolio Reconciliation and Electronic Messaging

ISDA surveys also tell us that larger portfolios and increased rate of reconciliation are becoming more prevalent in recent years. This observation is expected to become a norm as new rules and greater administrated oversight (e.g. EMIR) are formulated and applied. It is expected that this trend will continue in the future.

Greater fluctuation in the amount of collateral and greater number of rules exercised on them creates an additional pressure to increase efficiency in the flow of information. To achieve this, manual processing has been replaced by electronic messaging and according to the data from 2014 users of increased by nearly 88 percent.

4.1.3.1.4. Weaknesses of bilateral clearing

New administrative strategies and technical innovations undoubtedly increase the efficiency of bilateral clearing process. However, the process itself is dependent on the variety of inputs including frequent calculation of the risk exposure, proper and unfettered collateral exchange and safeguards for general counterparty risk exposures.¹⁰³

Some of the weaknesses of bilateral clearing can be discussed and improved in ways that are generally agreed upon by the parties involved. However, in some cases solutions offered might be quite unacceptable for everybody. For example, one bank can have a better system of evaluating risk and as a consequence it can generate greater profits for its clients. It would be beneficial for the clearing process if other parties also had the same effective risk assessment mechanism, but the problem is that by giving this information away would result in a loss of competitive advantage. At the same time a bank or a dealer with less efficient risk management might not agree with collateral assessments needed to cover the contract. In addition, frequency of collateral evaluation can differ between the parties, for example a dealer that evaluates collateral on a daily basis can have a different approach to risk assessment to the one who performs the same operation only weekly. Another weakness of risk assessment can be found when evaluating the entirety of profits and losses occurred. A party that as a result of a derivative contract would not simply suffer a loss, but could actually be forced into bankruptcy, has to place a higher value to such exposure. Different quality of the parties in a clearing process can be easily assessed by their credit ratings. But

¹⁰³ Commission of the European Communities, 2009, Ensuring efficient, safe and sound derivatives market, pg. 18

if these assessments change drastically, as it happens in times of crisis, a party's ability to cover the contract might decrease significantly. These and other weaknesses all show the limitations of bilateral collaterals and dependence of the clearing process on a wide variety of factors that cannot be easily analyzed by market investors.

4.1.3.2. CCP Clearing

As bilateral clearing is a major component of derivative trading in the OTC market, any shortcomings in this process have significant repercussions for the market as a whole. This is especially evident in time of financial crisis, and considering the assets and the amounts involved, represents a serious issue to be considered by investors and regulators alike. One way to address the weaknesses of bilateral clearing is to introduce an intermediary in the clearing process. The intermediary is called a Central Clearing Party (CCP) and its function is to be a direct buyer for the seller and a direct seller to the buyer.¹⁰⁴ This represents a significant change in the clearing mechanism. CCP should serve as independent party in the clearing of contracts and as such could potentially contribute lowering certain risk factors. One consequence of introducing intermediary is a necessity to have a standardized clearing, as it would be impossible to have different risk assessment mechanisms for sellers and buyers. Increased standardization also allows easier, more transparent and wider counterparty clearing net. The elimination of undesirable variability when making risk assessment and covering the trades with collateral should provide the possibility to expand cross margining between the parties. The benefit of reducing potentially contract making margin calls is evident, but it can only be applied to traders who are ready to accept greater standardization and additional costs and requirements that it introduces; investors unwilling to partake in the process cannot be effectively added to the net.¹⁰⁵

As CCP becomes a counterparty to each party involved its financing and independence, its duties and financing, covering the expense of its operation needs to be considered. CCP's can be formed as non-profit or for profit instruments.¹⁰⁶ Non-profit CCP's can simply be a component of more complex market participants, such as

¹⁰⁴ Commission of the European Communities, 2009, Ensuring efficient, safe and sound derivatives market, pg. 20

¹⁰⁵ International Monetary Fund, 2010, Global financial stability report: meeting new challenges to stability, and building a safer system, Chapter 3: making OTC derivatives safer, The role of central counterparties, pg. 6

¹⁰⁶ Fimarkets.com, 2013, Basel III and CCP promotion, viewed on 07.06.2014, http://www.fimarkets.com/pagesen/OTC_derivatives_CCP.php

large banking institutions that would finance their operation as any other service done for the banks clients. For-profit CCP's have to be independent from buyers and sellers of derivatives and under obligation not to involve themselves to take advantage of the clearing process. The financing for their operations would come from market traders who would pay the transaction fees.

Different CCP platforms can specialize for one or more derivative products and some of the major clearers and their specialization is showed in the table 1.

Platform	Contract type				
	Interest rate swap	Credit default swap	Foreign exchange	Equities	Other
CME Clearing (U.S.)		✓			✓
BM&FBovespa (Brazil)	✓		✓	✓	✓
Eurex Clearing AG (Germany)	✓	✓		✓	✓
Euronext/LIFFE BClear (U.K.)				✓	✓
ICE Clear Canada (Canada)					✓
ICE Clear Europe (U.K.)		✓			✓
ICE Trust (U.S.)		✓			
LCH .Clearnet (U.K.)	✓				✓
LCH .Clearnet.SA (France)		✓			
IDCG International Derivatives Clearinghouse (U.S.)	✓				
NASDAQ OMX StockholmAB(Sweden)					✓
NOS Clearing (Norway)					✓

Table 1: Currently Operational OTC Derivative CCPs
Source: <http://www.imf.org/external/data.htm>

4.1.3.2.1. Advantages and disadvantages of CCP clearing

In comparison to bilateral clearing, central clearing offers some obvious advantages. Parties of bilateral clearing have to allocate the collateral either at the beginning of the contract or provide it incrementally for the contract duration. This clearly limits the amount of collateral available at any point in time to cover the contract. In contrast, with CCP parties can allocate the collateral of all participants on a single platform, making the available collateral significantly larger and the corresponding margins much more secure. In effect, collateral of parties involved is aggregated both by the amount and by the cross margin netting involved.¹⁰⁷ The clearing platform therefore has significantly more flexibility and provides greater protection that contracts will be fulfilled without facing potentially hazardous margin calls. The decrease in risk is obvious.

Additionally and in a contrast to bilateral clearing, potential contract default risk is taken into account during the clearing process. In practice this means that collateral used for initial margining is applied first, and if found insufficient, the collateral from the contract guaranties fund (subsidized by all contract parties) is applied in the second step; finally, even if these funds are insufficient, the margin collateral of other parties in a contract is applied.

Advantages of CCP extend beyond increased amounts of money and security it offers. A very important benefit is added transparency that is the result of CCP's record of information that connects contract parties.¹⁰⁸ The trail of information can be available to regulators and the public decreasing the incentive of speculators to engage in high risk adventures with hopes that nobody will be able to track them. The actual level of transparency can be categorized in several levels. This is a possible solution to objections raised by investors who object to the idea that all details of financial transactions could be made public. Details deemed to be too sensitive for public eyes could be provided only to regulatory bodies, practically increasing transparency and preserving a level of privacy for players in the market. An example of how increased transparency works in practice is given by Depository Trust and Clearing Corporation's

¹⁰⁷ Commission of the European Communities, 2009, Ensuring efficient, safe and sound derivatives market, pg. 16

¹⁰⁸ International Monetary Fund, 2010, Global financial stability report: meeting new challenges to stability, and building a safer system, Chapter 3: making OTC derivatives safer, The role of central counterparties, pg. 7

(DTCCs) Trade Information Warehouse.¹⁰⁹ Data available to the public provided by the Warehouse do not include daily positions taken by the investors, but do provide an information if certain trades took place.

CCP is designed as independent component in the trading process and has no incentive to keep information about potential contract default with hope to accrue financial gain from it. Potential defaults can quickly cancel out, the integrity of a contract as a whole is preserved and CCP earns its administrative fees. Greater efficiency can be found in the amount of money available to the parties to invest. Lower risk translates into lower insurance premiums and leaves larger amounts of money for direct market investment. Increased centralization and automated nature of processes that previously required manual input all lead to growth in efficiency.

CCP clearing has some disadvantages as well.¹¹⁰ Because CCP is given a central role in the clearing process, where it serves as intermediary, failure of CCP could have a strong negative consequences. This cannot be overlooked, especially as clearing could take place among investors that have a wide variety of OTC derivatives. The OTC derivative standardization is helpful, but it is not realistic to expect that it could handle all possible variations of OTC market products. Therefore, the deficiency of the market would be transcribed to the CCP and some of the issues previously described in relation to the market as a whole, including risk management, would have to be dealt with. The issue of who should pay for contract default remains unresolved, as a single bankruptcy that is sufficiently large, could affect many investors who are not directly responsible for it. Although CCP provides an additional level of stability, it cannot serve as panacea for all deficiencies of the OTC market.

4.1.3.2.2. Cost and savings from CCP clearing

CCP does offer an advantage of lower expense costs to the investors. These savings can be divided into two groups; decreased deposit savings initially and lower operating cost during the term of the contract.¹¹¹

¹⁰⁹ Dtcc, 2011, Explanation of trade information warehouse data, viewed on 07.06.2014, http://www.dtcc.com/~media/Files/Downloads/Settlement-Asset-Services/DerivSERV/tiw_data_explanation.ashx

¹¹⁰ Commission of the European Communities, 2009, Ensuring efficient, safe and sound derivatives market, pg. 20

¹¹¹ Commission of the European Communities, 2009, Ensuring efficient, safe and sound derivatives market, pg. 21

A lower initial investment is achieved by the increased network of contributors. Decreased operating costs and fees are related to the existence of a single monitoring party (CCP). That replaces the need of multiple bilateral clearing platforms with mutually overlapping field of work.

OTC market dealers perform an analyses of potential financial joining CCP's. Dealers with solid volume of trade might find savings to be insufficient and fees too expensive to take part in the opportunities offered. Usually using a CCP is predominantly advantageous to those investors have a large volume of trade and significant financial investments. Also, they have to be ready to except increased level of standardization of their derivatives.

4.1.3.2.3. Impacts on OTC market

Increased standardization requirements of CCP are not limited in their effect on clearing process alone as they have repercussions for the OTC market as a whole.¹¹²The changes can seem subtle, but influence the traders in market extensively. For example, if an investor wants to join a CCP group it has to have a sufficient collateral to cover the margins. Effectively, this requirement significantly reduces a number of traders that can use services of a particular platform offered. Another example is a need for all participants to provide an exchange of information in a mutually acceptable format that can be easily understandable and available to all participants in a timely manner. Therefore, high efficiency electronic clearing is incompatible with parties relying extensively on paper documents. Also, a CCP can require up to date information to be presented frequently, for example several times a day, making participants with lower ability to process information simply unable to keep up with this rhythm.

There are many other examples like these but this should not give a false impression that increased standardization prevents the use of customized contract clauses and the existence of exotic derivative products. The increased standardization does not necessarily remove them from the OTC market, but it does limit the number of potential participants who can assemble around a particular CCP.

¹¹² J.P. Morgan, 2012, Regulatory Reform and Collateral Management, The Impact on Major Participants in the OTC Derivatives Market, pg. 5

4.1.3.2.4. One versus multiple CCPs

The benefits of CCP discussed previously are easy to understand, particularly in a situation where one platform serves a maximum number of clients.¹¹³ Obviously, greater number of market participants financing a single CCP would make transaction costs considerably lower for everybody. However, having only a single CCP is the financial equivalent of putting all eggs in a single basket. The size of collateral and huge netting potential make this option very appealing, but at the same time a potential risk of CCP malfunction, either financial or technical in nature would be catastrophic in its consequences for the entire market. Therefore, as one of major attempts of reforming the OTC market centers on risk mitigation and dispersion it would make no sense to introduce a new large scale risk factor such as a single CCP.

The other option is to have multiple CCPs, still sufficiently large to enjoy cost benefits, but not too big to fail the entire market in case something goes wrong. Multiple CCPs also offer the advantage of market competition and improve the environment for innovation, where potential benefits and shortcomings would be tested before the market application. Multiple CCPs also address an issue of cross jurisdictional discrepancies. This is especially important in cases when new reforms designed, for example, in EU could be politically unpalatable in the USA, creating implementation problems for a single OTC markets engaged in reforms of the clearing process. Greater degree of regional control could also make it easier for supervisory bodies to perform their function and discover any wrongdoings. The objections of a foreign meddling in the country's financial system could be resolved with greater ease.¹¹⁴

These ideas are summed up in the G20 report stating: *"In order to mitigate systemic risk resulting from counterparty credit risk, in the short run, it would be beneficial for there to be a competitive environment for central counterparties without imposing regulatory requirements that unduly fragment the market."*¹¹⁵ Therefore, it is recommended to have more than a single CCP in order to ensure competition.

Having multiple CCPs does not necessarily preclude cooperation between several platforms; some CCPs could be interlinked with others if there is a clear advantage that

¹¹³ International Monetary Fund, 2010, Global financial stability report: meeting new challenges to stability, and building a safer system, Chapter 3: making OTC derivatives safer, The role of central counterparties, pg. 7

¹¹⁴ Ordeberg T., 2011, The Structure of Global Market for OTC Derivatives Clearing Services: Legal and Economic considerations, Research Paper Harvard Business School, pg. 40

¹¹⁵ G20 Working Group, 2009, Enhancing Sound Regulation and Strengthening Transparency, pg. 31

can be relatively easy to implement.¹¹⁶ Consequently, CCPs would enjoy customizable benefits from, for example, increased collateral to cover the margins, but at the same time operate in different market segments and obey different national regulatory bodies and legislation. In order for this option to work for the entire OTC market further international discussions and agreements are necessary, as differences in customizable options cannot be so large to make cooperation unworkable to utilize in practice. Otherwise, trying to connect disparate CCPs would only create an additional level of complexity, and increase the risk of new OTC market crises and instability.

4.1.4. The regulatory framework for OTC derivatives

There are four documents determining the future of OTC derivative market:

1. EU- EMIR and MiFIR (2012)
2. US-Dodd-Frank CFTC (2012)
3. Basel III (2019)
4. CPSS-IOSCO (2012)

A common idea expressed in all of them is the increased standardization of the OTC market for its contracts to be more in line with ET derivatives, particularly when it comes to standardized clearing practices. The US and EU regulators have made the most progress in this regard and Figure XI shows the chronology of introducing and applying the changes in the clearing process.

¹¹⁶ International Monetary Fund, 2010, Global financial stability report: meeting new challenges to stability, and building a safer system, Chapter 3: making OTC derivatives safer, The role of central counterparties, pg. 23

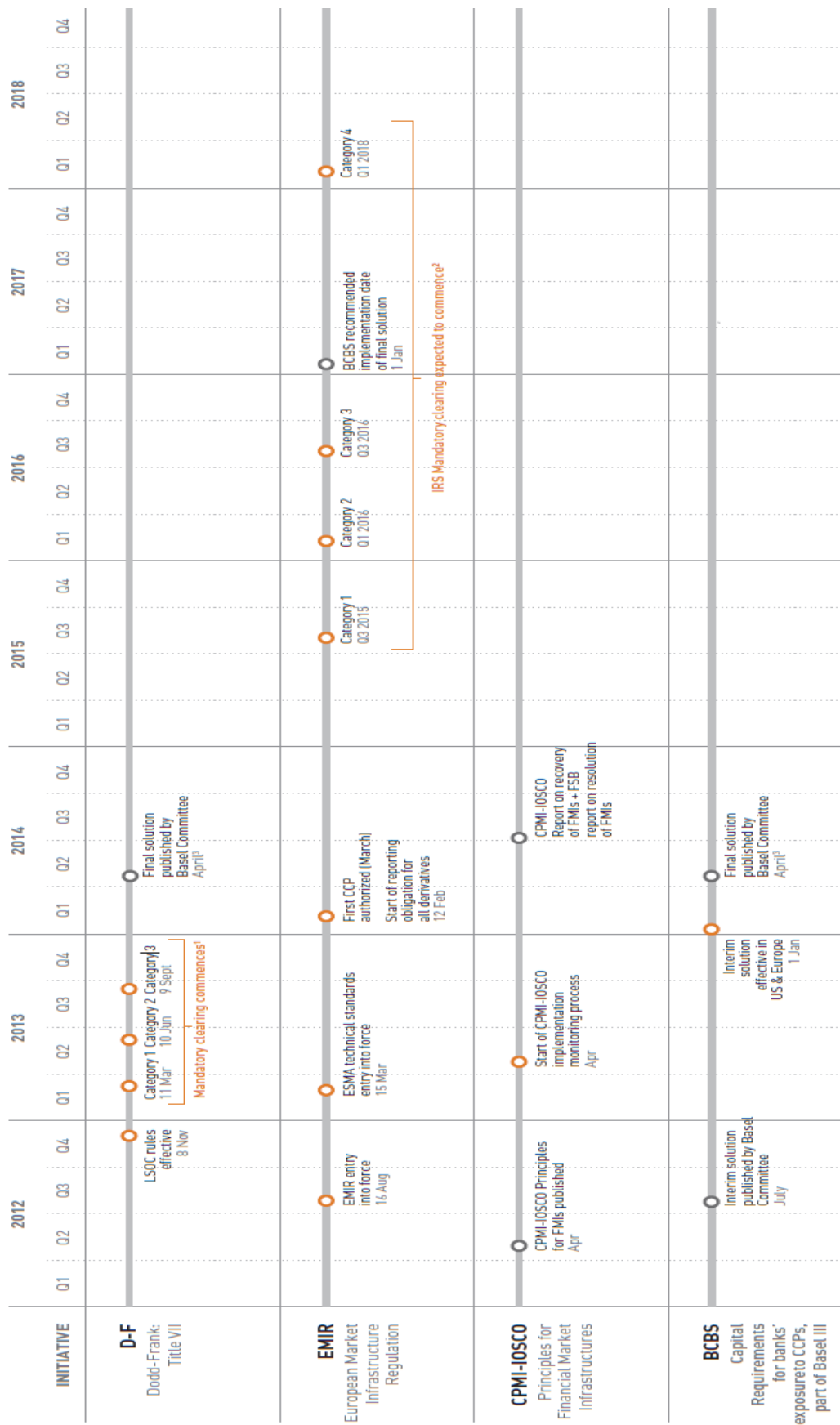


Figure XI: Regulatory Reform Timeline

Source: LCH.CLEARNET, 2012, Regulatory Timeline, SwapsClear, viewed on 10.06.2014, http://www.swapclear.com/Images/reg-timeline-15_tcm14-62950.pdf

4.1.4.1. EMIR and MiFIR

Main obligations, relevant for financial and, under certain conditions, non-financial parties as stated in EMIR are¹¹⁷:

- “Central Clearing for certain classes of OTC derivatives
- Application of risk mitigation techniques for non-centrally cleared OTC derivatives
- Reporting to Trade Repositories
- Application of organizational, conduct of business and prudential requirements for CCPs
- Application of requirements for Trade repositories, including the duty to make certain data available to the public and relevant authorities”

EU Regulation No 648/2012 published in Official Journal of the European Union, July 27 2012, explicitly stipulates obligations of parties trading with OTC derivatives and makes them liable to report their market endeavors in understandable format that can be easily stored and reviewed, as needed, at a later date by supervisory bodies.¹¹⁸

A practical implementation of the legislation should be done under advisement of ESMA and the EU Commission needs to establish criteria which derivatives and at what point in time will fall under new rules. It is clear that some derivative products will have more time to satisfy the new rules and the obligation implementation should not introduce an untimely burden in the OTC market.

According to MiFID2/MiFIR differences in with OTC derivatives trading, when compared with other financial instruments (e.g. shares), are more clearly delineated. At the same, time OTC derivatives themselves are broadly separated into two groups. One group of OTC derivatives has to be traded under the new rules and follow greater standardization requirements. They can be traded only via organized venues and all trades that involve significant amounts of liquidity, are performed regularly and often, have to follow the new rules completely.¹¹⁹ OTC derivatives that do not fall in the first

¹¹⁷ Esma.europa.eu, 2014, European Market Infrastructure Regulation (EMIR), viewed on 10.06.2014, <http://www.esma.europa.eu/page/European-Market-Infrastructure-Regulation-EMIR>

¹¹⁸ Article 1, (1), MiFID2

¹¹⁹ ISDA, 2012, Understanding the Role of the MiFID2/MiFIR OTC category, pg. 1

category can be traded as before and the only additional requirement is an obligation to improve transparency by keeping records of past transactions.

New rules are intentionally designed to provide leeway for market participants. The latitude provided allows European legislators to introduce reforms to the OTC market without strictness that would make them unacceptable for OTC market segments that fall under different jurisdictions. More rigorous rules would introduce a level of incongruity and force a segmentation of the OTC market. The measures adopted at the G20 meetings concerning OTC derivatives do not go that far and all market segments should be generally compatible to each other.

According to the Article 9 (1) of the regulation, all contract parties, including CCP, have to provide the information about derivatives traded a previous day.¹²⁰ Article 11 of the regulation deals with counterparties that do not have a CCP. They are required, among other things, to oversee and provide information related to derivative contracts in a timely manner that would allow counterparties sufficient time to cover their margins with a collateral. Amount of money required for CCP operation is set at EUR 7.5 million according to the Article 16 (1). Also the money required should correlate with estimated levels of risk.

Member states of the EU should, in accordance with Article 23 of the law, set up national regulatory bodies to monitor and insure that CCPs operation is in agreement with the corresponding EU rules. These national authorities are required to collaborate among themselves and to keep EU institutions, such as the European Systems of Central Bank (ESCB), informed of its actions. Compliance and compatibility of CCPs from jurisdictions, not covered by EU laws is regulated by ESMA. ESMA and ESCB are, according to the Article 29 of the law, also in charge of monitoring CCPs compliance with the requirement to keep transaction details for a minimum of ten years "...on the positions of cleared contracts, irrespective of the venue where the transactions were executed...".

Transparency of CCPs is regulated by Article 38 of the law. The Article contains provisions requiring all counterparties to provide adequate information about possible risk exposures, collateral used has to be proportional to estimated risks and in the form that provides a timely covering of margins (i.e. high liquidity collateral). CCPs have to

¹²⁰ Regulation (EU) No 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, 2012, Article 9, Reporting obligation

collect sufficient funds to cover a great majority of possible transactions among counterparties.

All the measures written in the law are designed to increase investor confidence, decrease risk and provide means to track and remedy potential non-compliance. OTC derivatives with greater level of standardization have to be traded under more strict conditions and meet additional requirements to minimize risk exposure, while more exotic OTC products, at a minimum, have to meet increased reporting responsibilities.

4.1.4.2. Dodd-Franks Act

Title VII of Dodd-Franks Act (DFA) “Payment, Clearing, and Settlement Supervision Act of 2010” contains additional provisions aimed at reducing risks and improving investment climate of derivatives market in the USA.¹²¹ Compliance with new rules and their further refinement and application in practice are responsibility of CFTC and SEC. Derivative products (swaps) can be broadly separated into asset-linked swaps, with trade supervised by SEC and CFTC regulated trade of swaps that are not linked to any particular securities (Sec. 723 of the Act).¹²² Market participants engaged in transactions that involve both types of swaps are obliged to follow requirements of both agencies. In many ways DFA mirrors the approach of EMIR.

Sec. 731 4s, “Registration and Regulation of Swap Dealers and Major Swap Participants” raises a threshold of responsibility by requiring market participants to register with CFTC and/or SEC and provide sufficient collateral and margin requirements, in proportion to “...risks associated with other types of swaps or classes of swaps or categories of swaps engaged in and the other activities conducted...” by contract participants. CFTC and SEC are also in charge of determining minimal level of funds traders have to provide to cover their positions. These requirements are flexible, with the aim to prevent unnecessary defaults and generate stable market environment.

Section 731 also mandates increased transparency by specifying greater reporting requirements, including details of all forms of information exchange among market participants. This data has to be provided in a timely manner, allowing supervisory agencies to perform their role efficiently and leading to greater market integrity. As

¹²¹ Commodity Futures Trading Commission, 2013, Federal Register, Derivatives clearing organizations and international standards, Final Rule, Vol. 78, No. 231,

¹²² Deutsche Bank Research, 2013, Reforming OTC derivatives markets, pg. 6

with EMIR DFA authorizes data trade repositories. Section 728 of the Act obliges market participants to follow instructions of CFTC and SEC, as appropriate, to insure accuracy and veracity of information collection and reporting.

The above mentioned and other Acts of DFA aim to insure prompt clearing, fast and reliable flow of funds and information and regulate many other aspects of derivatives trading, everything with the aim to prevent unreasonable speculation, improved stability and contribute to dynamic and profitable market functioning. Table 2 lists a summary of DFA implications on the OTC derivative trading.

Focus Area	Implications
Legal Agreements	1. Negotiate give-up agreements with the EBs 2. Negotiate clearing agreements with the FCMs including credit terms, fees, and collateral/Margin processing 3. Negotiate addendums for each of the CCP 4. Modify IMAs with the clients wherever required
Infrastructure connectivity with FCMs and CCPs	1. Utilize new affirmation matching platforms for affirmation of the trade terms with the EB 2. Test connectivity with the FCMs and CCPs 3. Test portability from one FCM to another FCM 4. Build eligibility module to determine the products eligible for central clearing 5. Develop new trade netting/collapsing processes to match the netting/collapsing at CCPs 6. Develop new reconciliations to reconcile trades/positions with FCMs 7. Develop a process to capture up-front trade level fees as well as maintenance fee
Trade reporting	1. Noncleared swaps must be reported to a registered “swap data repository” or, if one does not exist, to the CFTC or SEC, as applicable 2. Legal entity identifiers (LEIs) will be required for each internal fund as well as for client accounts for reporting 3. For noncleared trades, swap dealers will have to provide daily mark even if not requested by counterparty
Margin and Capital	1. Daily margin will have to be posted on all trades 2. Under the LSOC (legally segregated, operationally commingled) model, FCMs must segregate swap customers’ property from their own property 3. CCP prices will be used on a daily basis for margin calculation
Client communication	1. identify the client accounts where mandatory cleared swaps are currently being traded, or they could be potentially traded in future 2. Identify the IMAs that have to be modified for central clearing 3. Develop a client toolkit to be used for client 4. Develop a comprehensive client communication plan

Table 2: Impact of Dodd-Franks Act on OTC Derivatives market

Source: KPMG, OTC derivatives regulatory reform, Buy-side central clearing under the Dodd-Frank Act

DFA, despite many similarities with EMIR, treats certain aspects of derivative regulation in ways that are specific for the US section of the global derivatives market. Mandatory reporting, exemptions from new regulatory provisions, obligation of counterparties and specific requirements for certain assets have to be considered by market participants coming from other jurisdictions to the USA or trading simultaneously in multiple market areas.¹²³

4.1.4.3. Basel III

Basel Committee formulated a series of measures to address problems emanating from a financial crisis 2008/2009. The proposed measures are aimed at reducing risk, increasing stability and limiting consequences of derivatives market defaults on the financial system as a whole.¹²⁴ The measures should be applied incrementally over a six years period, ending in 2019.

There are three main parts of the proposal as shown in Table 3¹²⁵:

- Capital reform
- Liquidity Reform
- General improvements to the stability of financial system

Basel III		
Capital Reform	Liquidity Standards	Systematic risk and interconnectedness
Quality, consistency, and transparency of capital base	Short-term: Liquidity Coverage Ratio (LCR)	Capital incentives for using CCPs for OTC
Capturing of all risks	Long-term: Net Stable Funding Ratio (NSFR)	Higher capital for systemic derivatives
Controlling leverage		Higher capital for inter-financial exposures
Buffers		Contingent capital
		Capital surcharge for systemic banks

Table 3: Breakdown of Basel III proposals

Source: Kpmg, 2011, Basel III: Issues and applications, viewed on 11.06.2014, <http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Documents/baselIII-issues-implications.pdf>

¹²³ Deutsche Bank Research, 2013, Reforming OTC derivatives markets, pg. 8

¹²⁴ Basel Committee on Banking Supervision, 2010, Basel III: A Global Regulatory Framework For More Resilient Banks And Banking System, pg. 1

¹²⁵ Kpmg, 2011, Basel III: Issues and applications, viewed on 11.06.2014, <http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/Documents/baselIII-issues-implications.pdf>

4.1.4.3.1. New Capital Requirements for Counterparty Credit Risk from Bilaterally Cleared Derivatives

Changes in capital requirements can be interpreted as a need for banks to allocate greater amount of funds for covering their trades. When compared to Basel II requirements, these levels are practically twice as large. Higher transaction fees for OTC derivatives are suggested as an additional measure to improve market stability. Capital requirements should not be rigged, but sufficiently flexible to account for times of lower market volatility.¹²⁶ Also, market participants are encouraged to use a lower upfront costs and other advantages offered by the existence of CCPs in contrast to bilateral clearing.

Banks should use a series of measures to better evaluate risk and their potential exposure. These measures, with internal model method (IMM), considered the most sophisticated, are intended to decrease chances of entering into contracts with unreliable counterparties, to imitate particularly stressful situations over longer periods of time (e.g. one year) and take into account exposures from wider counterparty netting obligations.¹²⁷

Credit valuation adjustment (CVA) is an important addition to preexisting Basel II requirements, which did not consider credit rating changes of counterparties in derivative contracts. Lower credit rating effectively reduces liquidity levels accessible to counterparty even if the party does not suffer any measurable financial losses in the market. This omission has been remedied by Basel III.

Asset value correlation emphasize further the importance of capital accessibility. Before Basel III it was possible to give a large significance to non-financial risk exposures. Empirical data do not support this position. It is now assumed that correlating financial asset values is a much more important factor.

Executive personal should also be ready to monitor implementation of these proposals and enforce their requirements with more enthusiasm.

4.1.4.3.2. Margin requirements for bilateral cleared derivatives

Benefits of higher derivative standardization, CCPs and trade repositories cannot be applied universally. Non-standardized derivatives present a considerable exception in

¹²⁶ Basel III, A 1, 14 (a)

¹²⁷ Ingves S., 2013, Regulatory reforms for OTC derivatives: past, present and future, Banque de France, Financial Stability Review, No. 17, pg. 22

the implementation of new regulation. As there are no CCPs, these trades have to be cleared bilaterally and therefore require a different approach to remedy potential problems.

Discussions in a G20 format produced a proposal to address the issues of bilaterally cleared derivatives by Basel Committee on Banking Supervision (BCBS) and the International Organization of Securities Commissions (IOSCO).¹²⁸ These two institutions have a task to find a way for practical implementation of higher capital requirements of non-standardized derivatives. Higher capital requirements are considered an adequate solution to potential defaults. Implementing this solution is not as simple as raising the requirements on amounts of money needed to cover potential counterparty defaults of the clearing process.

After a quantitative impact study of 2012 BCBS and IOSCO proposed a set of measures aiming at higher margin requirements to reduce systemic risk and promote central clearing. Parties entering into non-standardized derivatives would have to expect and take into account higher financial requirements, corresponding to higher levels of risk associated with these contracts. The idea is that derivative trading would involve parties having access to larger amounts of money, who would be less likely to make risky investments and consequently contribute to lower market instability, especially at times of crises. Those parties unable or unwilling to accept higher margins would have to move to standardized derivatives clearing.

Introduction of higher margins is a more desirable way of increasing capital requirements. If counterparties are only required to hold more capital to cover their trades it has the effect of reducing their free liquidity and limits a party not responsible for defaults in its financial options. In contrast, higher margins place the burden on a counterparty to engage in trades it considers of sufficiently low risk. Therefore, higher margins favor less risky financial environment. Additionally, funds used as a collateral by counterparties can be selected to cover various positions they take, not specifically limited to particular contract. Margins can be much more specific and vary from contract to contract. Changing them is also easier than changing collateral requirements in

¹²⁸ Basel Committee on Banking Supervision, 2012, Margin requirements for non-centrally cleared OTC derivatives, Consultative Document, pg. 1

response to altered financial situation of counterparties; in other words, margin changes are a tool that can be easily customized.¹²⁹

It is easy to criticize increased margin requirements by pointing to larger margin collaterals necessary by derivative traders. However, increased margins should be viewed in a wider context of measures proposed by Basel III. The margin requirements are flexible enough and can be changed relatively easily to address changing situations and rules that can be adopted in different jurisdictions.

Calculating margin requirements has to account for *“potential future exposure (initial margin) and current exposure (variation margin) associated with the portfolio of non-centrally-cleared derivatives”*.¹³⁰ As discussed previously with standardized derivatives, it is important that collateral is liquid enough to be readily available to cover the margin calls. Also, rules governing margin activity should not deviate too much among markets of different jurisdiction, and be written in a way to prevent placing an unnecessary burden when trading in different segments of a market. As with EMIR and DFA, implementation of Basel III should be done over a reasonable period of time supportive of over smooth transition to new rules and regulations.

Given the importance of sufficient and timely liquid assets Basel III developed two standards of measuring them: Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR).¹³¹ LCR is used to measure the availability of short term funds (up to 30 days) by banks or other investors in non-standardized derivatives market. The ability of investors to cover a long term risk and challenges is measured by NSFR.

According to regulatory standards of Basel III short term stress scenario measured by LCR refers to (Basel III B1):

- *“a significant downgrade of the institution’s public credit rating”*
- *“a partial loss of deposits”*
- *“a loss of unsecured wholesale funding”*
- *“a significant increase in secured funding haircuts”*

¹²⁹ Basel Committee on Banking Supervision, 2012, Margin requirements for non-centrally cleared OTC derivatives, Consultative Document, pg. 3

¹³⁰ Basel Committee on Banking Supervision, 2012, Margin requirements for non-centrally cleared OTC derivatives, Consultative Document, pg. 4

¹³¹ <http://www.bis.org/publ/bcbs165.pdf>

- *“increases in derivative collateral calls and substantial calls on contractual and non-contractual off-balance sheet exposures, including committed credit and liquidity facilities”*

A long term stress scenario measured by “...net stable funding requires a minimum amount of stable sources of funding at a bank and the potential for contingent liquidity needs arising from off-balance sheet commitments, over a one-year horizon.” (Basel III B 2)

4.1.4.3.3. Rules for the capitalization of exposures to central counterparties

According to previous, Basel II, rules the role of CCP did not deserve any special attention and consequently many of its parameters have not been well defined. Increased importance of CCPs under Basel III rules necessitates a well-defined and easily monitored requirements, especially when it comes to CCP funding. The funding now has to be in accordance with Basel III “Principals for Financial Market Infrastructure” (PFMI) to have a low risk status of default. Lower risk comes from CCP’s compliance with oversight of regulatory bodies such as central banks.

OTC derivative investors (e.g. commercial banks) can under Basel III consider two types of risk associated with using of CCPs.¹³² Trade exposures refer to default risk associated with CCPs inability to clear a trade transaction. For Basel III compliance CCPs, this risk is set at 2 percent. Therefore, transaction clearing risk is considered to be low, but parties have to keep in mind that a certain level of risk still exists and CCP trading is not entirely risk free. Default fund exposures refer to an additional component in calculating a risk exposure of using a Basel III compliant CCPs. This exposures originates from a possibility that other counter parties using a same CCP might not be able to meet its obligations, forcing other counterparties to fund its obligation.¹³³

4.1.4.4. CPSS-IOSCO

Cooperation between CPSS and IOSCO resulted in a new set of rules aimed at fulfilling G20 requirements for increased stability of derivative markets. The principles and recommendations on payment systems published by the same agencies between 2001 and 2004 have been modified, broadened and strengthened. These changes,

¹³² Ingves S., 2013, Regulatory reforms for OTC derivatives: past, present and future, Banque de France, Financial Stability Review, No. 17, pg. 24

¹³³ Basel Committee on Banking Supervision, 2012, Capital requirements of Bank Exposures to Central Counterparties, pg. 2

published in 2012 are known as *Principles for financial markets infrastructure*. New developments provide greater stability of markets by reducing systemic risk, increasing derivatives standardization, encouraging CCPs and making previous recommendations obligatory for participants of derivatives market. The principles are written and explained in three separate documents:¹³⁴

- “a report entitled Principles for financial market infrastructures “
- “a consultation paper on an assessment methodology for these new standards”
- “a consultation paper on a disclosure framework for the standards”

As these influence many essential aspects of payment transactions it is appropriate to call them “Financial market infrastructure” (FMI’s). In words of one of the chairmen’s of IOSCO only after latest financial crisis it possible to appreciate how valuable FMI’s can be in insuring normal market functioning.

A total of 24 new standards are explained in greater detail in a consultative report published in March 2011.¹³⁵ It is possible to group the standards according to specific issues being addressed by IOSCO and CPSS.

General organization of financial market infrastructures (Principles 1-3) emphasize transparency, efficiency and risk management, to be implemented on a legislative, executive and administrative levels. Credit and liquidity risk management (Principles 4-7) deal with finances necessary to cover margin exposure and sound collateral assets, including high liquidity capital. Settlement issues, including timing distribution and delivery are stressed in Principles 8-10. Central securities depositories and exchange-of-value settlement systems are highlighted in Principles 11 and 12. Default management addressed concerns of limiting effects of default spillover (Principles 13 and 14). General business management (Principles 15-17) focuses on the existence of measures and assets that can be used to provide smooth operating of financial markets, especially in stressful situations. Access principles (18-20) refer to the existence of unbiased information flow among different players in the market. Efficiency of standards implementation involves principles 21 and 21. Financial transaction transparency concerns are explained in principles 23 and 24. PFMI document also

¹³⁴ Bis.org, 2012, New standards for financial market infrastructures issued by CPSS-IOSCO, viewed on 17.06.2014, <http://www.bis.org/press/p120416.htm>

¹³⁵ Committee on Payment and Settlement, Technical Committee of the International Organization of Securities Commissions 2011, Systems Principles for financial market infrastructures

contains a section on “In this document there are also “Responsibilities of central banks, market regulators, and other relevant authorities for financial market infrastructures” (Responsibilities A-I).

It is clear that the listed principles can have a meaningful implementation only if national and international agencies and organizations collaborate in the process.

To evaluate success of implementing PFMI in practice CPSS and IOSCO have developed an assessment methodology based on self-reporting from all countries that have agreed to support the G20 proposals. A document, *Implementation of the PFMI-level 1 assessment report*, first published in August of 2013 and updated in 2014, contains the process development information.¹³⁶ Each participating country (i.e. jurisdiction) can have a ranking on a scale of 1-4, with level 4 representing full measure implementation.

Implementation progress variation among different FMI components, CCPS, Payment Systems (PS), Central Security Depositories (CDS), Securities Settlement Systems (SSS) and Trade Repositories (TR) is given in Figure XII.

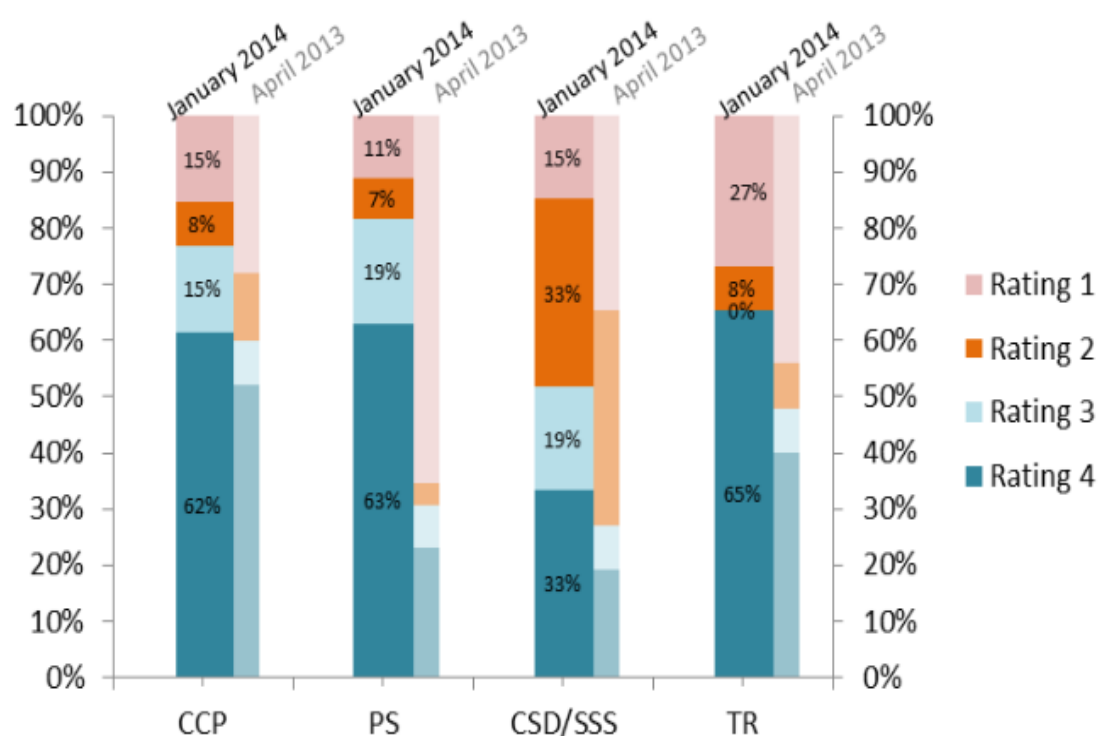


Figure XII: “Progress of Principles by FMI type”

Source: CPSS and IOSCO, 2014, Implementation monitoring of PFMI: First Update to Level 1 assessment report, pg. 6

¹³⁶ OICV-IOSCO, 2013, Implementation monitoring of PFMI-Level 1 assessment report, pg. 4 and Implementation monitoring of PFMI: First update to Level 1 assessment report

4.1.5. OTC market segments and their regulation

OTC market products can have a high degree of variation, customization and risk exposure. EU Commission categorizes different types of contracts into five separate groups, each one of them requiring specific regulatory measures. These contracts are:

- credit derivatives
- interest rate derivatives
- foreign exchange derivatives
- equity derivatives and
- commodity derivatives

4.1.5.1. Credit Default Swaps and their regulation

Credit default swap represent a contract where one side (i.e. buyer) pays a certain insurance fee for duration of the contracts, and in exchange receives a guarantee from the other party (i.e. seller).¹³⁷ The contract is terminated either at pre-set maturity date or if a credit event takes place. Credit events (e.g. bankruptcy, defaults, restructuring) and other aspects of these contracts are defined in accordance with ISDA master agreement, with jurisdictions specific rules and requirements.¹³⁸ In the aftermath of the event, CDS seller has an obligation to provide a pre-arranged asset or corresponding amount of money to a CDS buyer as a sort of insurance payoff. Credit event can be tied to a performance of a company, an index or some other financial instrument.

As discussed previously years preceding financial crisis of 2008 saw an exponential increase of derivative market capitalization, including CDS. Limited regulatory requirements prevented any meaningful estimation of investor's risks exposures leading to serious consequences in crisis aftermath. CDS continue to increase both in number and nominal amounts of money, therefore requiring modification of existing and introduction of new stipulations in CDS trading ("Big Bang Protocol"). As the name suggests, Credit Derivatives Determinations Committees and Auction Settlement CDS Protocol introduces¹³⁹:

- auctions settlement provisions

¹³⁷ Commission of the European communities, 2009, Ensuring efficient, safe and sound derivatives markets, pg.

¹³⁸ Treasury Securities and U.S. Sovereign, 2011, Credit Default Swap Market, pg. 1

¹³⁹ Isda.org, 2009, News Release, viewed on 19.06.2014, <http://www.isda.org/press/press040809.html>

- establishment of the CDS Determinations Committees (DC) to evaluate credit event occurrence and consequent obligations
- “a common standard effective date for CDS transactions” requirement

The changes represent a considerable improvement and contribute to reduction of many “grey areas” that invariably contributed to greater risk and instability of CDS segment and derivatives market in general. CDS DCs has been set up for five major jurisdictions, corresponding to different continents plus Japan.¹⁴⁰ Each DC has a group of voting members that can resolve issues such as credit event occurrence by a majority vote. The auction process introduction is obligatory for all participants who sign up to the changes (“hardwiring”), unless both parties agree to opt out.

Any discrepancies in understanding or implementing the contract terms are resolved by DCs in charge.¹⁴¹ Common effective date for event occurrence is defined in the way that prevents possible misunderstandings. It is tied specifically to credit event as determined by DCs and any other contract terms that are in disagreement with a standard are considered null and void. Depending on situation, a credit derivative transactions has to be performed within 60 or 90 days from a CDS credit event. Any questions or issues a contract party has can be referred to DC from a corresponding jurisdiction and they become a public knowledge, therefore contributing to increased transparency of the trading process.

The provisions hardwired in the Big Bang Protocol have been further enlarged in scope to include restructuring credit events, and prolong the time market participants can sign up the protocol; this ISDA supplement to CDS definitions is called a *small bang protocol*.¹⁴² The addition of the new protocol allows interested parties to use a novel way of payments settlement if they have to engage in that restructuring.¹⁴³ New rules, applied in a case of restructuring mean that as a first step, a jurisdiction relevant DC has to confirm restructuring event occurrence. The CDS parties involved have to agree that restructuring is more desirable than default; consequently all parties accept a certain amount of loss. Before CDS transactions can be restructured it is necessary to

¹⁴⁰ Commission of the European communities, 2009, Ensuring efficient, safe and sound derivatives markets, pg. 25

¹⁴¹ Isda.org, 2014, Big Bang Protocol, viewed on 19.06.2014, http://www.isda.org/bigbangprot/bbprot_faq.html

¹⁴² Isda.org, 2014, Small Bang Protocol, viewed on 19.06.2014, <http://www.isda.org/smallbang/>

¹⁴³ Gupta S., 2012, Credit Default Swap: Regulations, Changes and Systematic Risk, Research Journal of Finance and Accounting, Vol. 3, No. 8, pg. 31

bundle them, usually by a maturity date. Transaction bundling into buckets is determined by a DC in charge. After DC's determination contract parties have five business days to choose if they consider a triggering event has occurred. A triggering event initiates a hardwired auction settlement provisions for each transaction pocket. Depending on the CDS terms, big bang or small bang protocol can apply in a restructuring process, unless the transactions are excluded by protocol definition or agreements of all parties of the contract. Restructured CDS maturity date cannot exceed the maturity date of the original CDS, and it can happen in a period of 30 months after restructuring but before the CDS maturity date (modified restructuring-MR), or between 30 or 60 months period and the CDS maturity date (modified modified restructuring- MMR). When and if these procedures apply can vary between different jurisdictions (e.g. European and North American markets).¹⁴⁴

Increased standardization of CDS by the introduction of small bang protocol is noticeable in the limit of fixed coupon possibilities. In the US jurisdiction only coupons 100 basis points (bp) and 500 bp are allowed for CDS under the new protocol. This makes it easier to trades CDS, as they can be easily compared for potential gains or losses, but at the same time introduces a new level of complexity as old contracts have to be recalculated to the new standards.¹⁴⁵ It was easier to this in US as the restructuring process is in a way comparable to chapter 11 protection. Therefore, it was easy for the market to accept new standardized rules. The EU, with no mechanisms of chapter 11, offered a modified approach with greater number of fixed coupon basis points (25, 1000 and in some cases 300 and 750 bp are offered). This makes it less costly for EU investors to adept their CDS to the new standards as the fees that have to be paid by CDS buyers (sellers) to achieve a new standardized basis point is decreased.¹⁴⁶

Contracts that could be easily compared to each other can be traded more easily too. Consequently, the changes make it easier for CCPs to do their job. Additional changes and protocols can be expected in the future, as there are still CDS end products that do not fall under the small bang protocol.

¹⁴⁴ Commission of the European communities, 2009, Ensuring efficient, safe and sound derivatives markets, pg.

¹⁴⁵ Commission of the European communities, 2009, Ensuring efficient, safe and sound derivatives markets, pg. 27

¹⁴⁶ Markit.com, 2009, Announcements, viewed on 20.06.2014, http://www.markit.com/cds/announcements/resource/cds_small_bang_07202009_upd.pdf

Increased CDS standardization is not the only way to reduce the risk and improve efficiency in derivatives market. New trading mechanisms, especially ever increasing electronic trading and data bases also play a major role. Trade reporting repository, where each transaction receives a unique identifier, can store market relevant information and makes it accessible to investors, the public as well as regulators. A gain in transparency, risk reduction and efficiency is obvious.¹⁴⁷

One of the biggest providers of price transparency is Markit. Markit emphasizes its ability to track data associated with OTC trading and sift information valuable to its clients.¹⁴⁸ Up to date information is checked to insure its reliability and after analysis offered to various interested parties. The existence of such services is a significant contribution to increased market transparency.

Increased use of centralized clearing in CDS trading has also provided an additional support to market transparency. Initial provider of upgraded clearing services for the US market was ICE Trust, and in the EU companies such as BC Clear, Eurex Clearing, Ice Clear Europe and LCH Clearnet SA offer improved clearing services.¹⁴⁹

4.1.5.2. Interest rate derivatives

Interest rate derivatives (IRD) represent agreements where parties are under obligation to exchange payments arising from changes in interest rates over prearranged period of time; considering the amounts of money involved they represent the largest group of OTC derivatives.¹⁵⁰ The value of IRD depends on interest rate changes and these contracts can take various forms, but for the most part they fall in one of three categories: interest rate swaps, interest rate options and forward rate contracts.

As with other derivatives, there is no assumption that the underlying assets will be traded. Rather, contract parties provide payments proportional to rate changes. As no principle payment is required at contract inception they are quite popular with investors. Another reason for popularity is the existence of transparent pricing mechanisms and straight forward understanding of risk associated with hedging strategies.

¹⁴⁷ Dtcc.com, 2014, Trade Information Warehouse, viewed on 20.06.2014, <http://www.dtcc.com/asset-services/trade-information-warehouse/trade-reporting-repository.aspx>

¹⁴⁸ Markit, 2014, Pricing Data CDS, viewed on 20.06.2014, <https://www.markit.com/Product/Pricing-Data-CDS>

¹⁴⁹ Commission of the European communities, 2009, Ensuring efficient, safe and sound derivatives markets, pg. 29

¹⁵⁰ Commission of the European communities, 2009, Ensuring efficient, safe and sound derivatives markets, pg. 31

IRDs segment of the OTC market continues to grow, although at the slower pace when compared to pre-crisis period, and this is more evident in emerging market economies.¹⁵¹ Lower rate of growth can be explained by several different reasons; they are all connected to lower number of new bond offerings, as well as stable interest rates providing a low cost opportunity and incentive for investors to swap riskier short term exposures for much more stable fixed and long term interest rate contracts.

Interest rate derivatives are mostly traded among the participating banks (directly, voice based). Dealer trades with other dealers or clients, represent a smaller component of the market. Electronic trade confirmation, performed through Markit, has been set up over a decade ago, but it matured and has become a dominant feature in the market since the 2009 crisis. Some of these derivatives were standardized in accordance with ISDA Master Agreements even before the introduction of post crisis reforms and regulations. Therefore, any additional requirements placed by market participants are easily implemented.

Centralized clearing, covering the majority of the standardized market, is to a large extent provided by SwapClear. The company, working with regulators, continues to improve and develop its services make them acceptable for various jurisdictions and market conditions.¹⁵² Non-standardized interest rate derivatives continue to be traded, but for reasons discussed previously, cannot use centralized clearing and have to rely on a riskier bilateral approach.

According to *Greenwich Associates* Study of interest rate derivatives prospects for 2013, it was obvious for the majority of participants that the new regulatory rules will lead to increased compliance expenses.¹⁵³ It is also believed that additional expenses, will not have a major impact of the way these derivatives are traded. A far more important and influential factor seems to be a widely held opinion that governments are going to keep the interest rate slow in the immediate future. Consequently, it is not reasonable to expect a reversal over declining trend of interest rate derivatives transactions. Political influence carries even more weight than counterparty risk exposures.

¹⁵¹ Bis.org, 2013, The OTC interest rate derivatives markets in 2013, viewed on 20.06.2014, http://www.bis.org/publ/qtrpdf/r_qt1312h.htm

¹⁵² Swapclear, 2013, About, viewed on 21.06.2014, <http://www.swapclear.com/>

¹⁵³ Greenwich Associates, 2015, Systemic Risk and the Impacts of Central Clearing

4.1.5.3. Equity derivatives

Equity derivatives account for a relatively small segment of the derivatives market, both in the number of trades and the nominal values of contracts.¹⁵⁴ They are the most recent addition in a wide variety of derivatives, leaving many aspects of the trading process open for market experimentation and development. Equity derivatives are also distinguished by the fact that their values are significantly related to the values of underlying assets. Since the price of assets can be determined in an open and usually straight forward way, equity derivatives trades have a high level of transparency. Different types of these derivatives, options, equity swaps or variance swaps, can be traded using the exchange infrastructure as is the case with the US market, or trading can be done by investors outside of the exchange, an occurrence more likely in the European markets. As with other derivatives, ISDA market agreements provide the framework of the trading process, however many unresolved details result in a low level of standardization characterizing these types of contracts. Therefore, the existence of electronic trading, mostly done through Markit services is relatively limited in scope and does not surpass 20% of trading volume. Obviously, direct dealer to dealer trading with its low level of standardization and highly customizable contracts is not well placed to take advantage of benefits offered by technological development. Only exchange traded derivatives of this type are suitable for CCP clearing, while the rest has to rely on more risk prone bilateral counterparty risk exposures.

4.1.5.4. Commodity derivatives

Derivative of this type are among the oldest derivatives products offered, going all the way back to the beginning of the Chicago Board of Trade.¹⁵⁵ A wide variety of commodities available to traders means the contracts can have a very low level of standardization in some cases, while at the same time for different commodities, a level of standardization can be quite high. As with other derivatives, more standardized products are suitable for trade on the exchange. Majority of commodity derivatives are not standardized and the framework of the trading process is provided through ISDAs EFET, NBP or other types of Master agreements. Electronic trading is available through various services, however a lack of standardization means that for the most

¹⁵⁴ Commission of the European communities, 2009, Ensuring efficient, safe and sound derivatives markets 33

¹⁵⁵ Carruthers G.B., 2013, Diverging derivatives : Law, governance and modern financial markets, Journal of Comparative Economics 41, 386-400

part trades are confirmed in a direct manner (voice). Similarly, some products can be easily cleared through CCPs while others have to use more old fashioned models. It is interesting to note that the existence of bilateral clearing does not necessarily mean a high level of risk or a high collateral requirement. The reason for this is that sometimes there is no real need to have a monetized collateral, as the commodity itself can fulfill the role. Consequently, commodity derivatives offer an example of non-standardized low collateral and at the same time low risk contract.

4.1.5.5. Foreign exchange derivatives

As the name suggests, these contracts refer to trading in foreign currencies and provide wide variety of options for market participants (FX).¹⁵⁶ Traditionally, trade volume significantly lagged behind the nominal amounts of currencies traded, but recently the actual number of transactions is on the rise, partly as a result of algorithmic trading. Although foreign exchange derivatives have a relatively long history, the exotic options of certain contracts correspond to high risk exposure levels. This is especially evident in very short term contracts, when it is quite possible to have a situation where a chain reaction of clearing process failures might occur. To prevent these events, where for example one bank would be required to fulfill its obligations before receiving due payments, a continuous link settlement system (CLS) was created.¹⁵⁷ Member banks (60) and other users (thousands) use CLS as an intermediary, guaranteeing timely settlement of mutual obligations during the payment process. One might conclude that CLS performs a function of CCP, but this is only partially true and does not apply to all mechanisms or functions the CLS and CCP have. Trading process framework is provided by ISDA Master Agreements and usually English law, as the City of London is the single largest FX market jurisdiction. As with other derivatives voice based trades are common for less standardized products while the electronic dealer to dealer and dealer to client trades are available for more standardized FX derivatives. For almost four decades SWIFT performs a trade confirmation service. The FX spot market deals with more traditional and standardized products while other types of contracts offer more customization and carry greater settlement risk.

¹⁵⁶ Commission of the European communities, 2009, Ensuring efficient, safe and sound derivatives markets 35

¹⁵⁷ Mägerle J., Maurer D., 2009, The Continuous Linked Settlement foreign exchange settlement system (CLS), Swiss National Bank, pg. 2

5. Conclusion

Derivatives allow investors to manage and hedge their risks, serving as an important tool in a contemporary global economy. Various trading and contract options offered through derivatives expand lending and borrowing choices, provide variety of means to handle risks, and consequently, open new ways to earn significant profits.

The latest global financial crisis continues to be strongly associated with irresponsible and unaccountable risk-taking on the derivatives market. Therefore, improved regulatory framework is widely considered as the best way to advance market stability and increase investor confidence. The enormous size of the OTC derivatives market alone, makes it impossible that such an important segment of global finances could be essentially unregulated. Those regulations that existed prior to the crisis were generally a result of private agreements, often lacking means of enforcement and public transparency. A failure in one segment of market, with hidden exposures widely broadly unknown, could create and spread panic in a chain reaction resulting in devastating consequences. A huge financial requirements necessary to address this problem could significantly reduce market liquidity and transfer the problem to all other segments of the financial market. Government intervention can alleviate this problem, but clear rules are necessary to reestablish investor confidence and prevent misuse of public funds. More standardized ET derivatives offered greater transparency, decreased counterparty risks and create environment for greater stability and reliability of financial transactions. The difference between the OTC and ET market segments is highlighted by ISDA, an entity representing only a select number of market participants, who unsurprisingly reach agreements that suit their own needs. Non-binding nature of earlier agreements on derivatives trading showed its inefficiency in handling market crisis, but old arrangements can serve as good starting point in discussions to enhance regulatory framework and its requirements of increased transparency, reduced risk and improved clearing mechanisms. All these segments of OTC derivatives regulation have seen significant improvements in the aftermath of the financial crisis. Emphasis on centralized clearing of OTC derivatives is a significant and relatively easy to implement way to minimize contract failures. Also, investors now face greater margin requirements to cover their trades, reducing a tendency to engage in reckless deals. Increased price transparency, by introduction of transaction reporting repositories, is an additional factor that should improve market stability. The implementation and

exercise of new rules come with increased cost requirements. To insure that new costs do not inadvertently reduce available liquidity and actually increase the risk of market instability, it is necessary to carefully monitor and manage application of new contract rules. Studies performed by regulatory agencies, both public and private, are an important instrument to gauge how the market would react in changing regulatory environment. The existence of centralized clearing house reduces clearing risks but at the same time a failure of a significantly large clearing center could have a serious and widespread ramifications. Therefore, regulation on centralized clearing and its potential downsides have to be carefully analyzed prior to their introduction in a specific market environment. Improvements are also visible in introduction of new technologies, such as real time electronic matching. Standardized transaction management and record keeping can have a considerable influence of the systemic risk reduction. The Big Bang Protocol increased standardization, both by better record handling and supervision, as well as new auction settlement terms and definite specification of trade chronology and dates of execution. Restructuring of derivatives that remained unresolved by the Big Bang Protocol have been further clarified and the auction process better interpreted by the Small Bang Protocol. All these efforts are aimed at more effective central clearing and reduced possibility of delinquency events. In the US jurisdiction new standardized requirements for centralized clearing have been introduced by Title VII of the *Dodd-Frank's Act*. Many of the new transactions have to be processed by newly introduced electronic trading platforms. However, there are still derivatives whose trading falls outside of the new rules, they can still be privately negotiated and outside of the public knowledge. Proposals of Securities and Exchange Commission and the Commodity Futures Trading Commission include implementation of internationally agreed steps to introduce to reduce systemic market risk. They do include existence of data repositories, greater liquidity and margin requirements and greater standardization of centralized clearing. The segment of the market delimited by new regulatory rules has seen the effective improvements as estimated by Securities Industry and Financial Markets Association (SIFMA) of US investors.

In the EU Basel III conclusions are in the process of implementation. Better transparency and increased margin requirements are now accessed with two additional financial tools, the short term Liquidity Coverage Ratio (LCR) and the longer-term Net Stable Funding Ratio (NSFR). These ratios should provide investors with better information of bank exposure and the ability to meet potential obligations. Again,

market segments specified by new regulation should see apparent improvements in derivatives trading.

Despite all of the improvements, there are still some sections of the derivatives market that continue to be an area of concern. Greater standardization is encouraged, but significant exposures still remain in more exotic derivative contracts. Some of them cannot be easily standardized and, anyhow, the increased risks also carry potentially increased profits. Their reform, assuming it was possible, requires an additional level of political contribution and it goes to the essence of derivative contracts. The lowest risks and the lowest returns can be found with the contracts linked to actual commodities. But the kind of assurance that commodities provide goes against decades-long trend of increased acceptable risk necessitated by the desire to obtain profits.

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Zusammenfassung

In den vergangenen Jahrzehnten wurden die Finanzinnovationen der derivativen Produkte als Markenzeichen und Tugend des amerikanisch geprägten Kapitalismus gefeiert. Seit der Finanzkrise im Jahr 2008 ist dies nicht mehr der Fall. Die derivative Produkte, die Schuldverpflichtungen und Credit Default Swaps werden von der Öffentlichkeit, den Medien und den politischen Entscheidungsträgern als verantwortlich für die Vernichtung des amerikanischen und globalen Finanzsystems kritisiert.

Mit dem Wachstum der OTC-Derivaten Markt, wurde es offensichtlich, dass es nicht ungeregelt bleiben kann. Statt der öffentlich festgelegten Aufsicht der Marktteilnehmer, folgte ein privat ausgehandeltes Regelwerk. Die Schranken solch einer Regelung wurden erst nach der Krise sichtbar. Das Kontrahenten Risiko wurde durch die Banken, Leistungs- und Begleitagenturen gemindert, die Mängel zeigten sich, als Investoren stoppten die Transaktionen untereinander und brachten die Illiquidität auf den Markt. Zur der Zeit, hatten die ET Derivatgeschäfte dieses Problem noch nicht erlebt, da es ein klares Verständnis von Gegenpartearisiken und Forderungen gegeben hat. Mehr Transparenz in den OTC-Märkten sollte die Stabilität des gesamten Finanzsystems verbessern. Preistransparenz ist ein wichtiger Faktor zur Verbesserung der Markteffizienz. Der mögliche Marktmissbrauch kann durch Pflichtmeldungen von Geschäften festgestellt werden, wenn die Daten-Repositorien die Informationen sowohl für den Anleger als auch dem Aufsichtsbehörde zur Verfügung stellen. Neue Regeln erhöhen die Betriebskosten für Investoren, aber zur gleichen Zeit machen, Überwachung der Systemrisiken und Marktmissbrauch leichter durchzuführen, was zu einer langfristigen Verbesserung des Marktumfeldes führen würde.

Bedeutende Fortschritte sind durch die Einführung der neuen Bestimmungen und Maßnahmen bei der Regulierung des OTC-Derivaten Marktes erreicht worden. Um die Auswirkungen ihrer Einführung festzustellen, muss eine ständige und ordnungsgemäße Umsetzung der Verordnung durchgeführt werden. Verstärkte Standardisierung von OTC-Derivaten ist nicht immer möglich und sollte nicht als Allheilmittel für die Finanzkrise betrachtet werden.

Summary

In decades behind us, as financial innovations of derivative products were celebrated as hallmark and virtue of American-style capitalism. After the financial crisis in 2008 this is not the case anymore. Derivative products, mostly debt obligations and credit default swaps are being criticized by the public, media and policymakers as responsible for devastating American and global financial system.

With the growth of OTC derivatives market, it became obvious that it cannot stay unregulated. Instead of publicly determined supervision market participants followed a privately negotiated set of rules. Limits of such regulation became visible after the crisis. Counterparty risk mitigated through banks, rating agencies and collateral, showed its shortcomings when investors stopped transacting with each other, bringing illiquidity to the market. At the same time, ET derivatives transactions did not experienced this problem, as there was a clear understanding of counterparty risks and exposures. More transparency in OTC markets should improve the stability of the whole financial system. Price transparency is an important factor of improving market efficiency. Possible market abuses can be detected through obligatory transaction reporting, with data repositories holding the information available both to investors and regulatory bodies. New rules increase the operating cost for investors, but at the same time make monitoring of systemic risk and market abuses easier to perform, leading to long term enhancement of market environment.

Significant progress has been achieved in regulating the OTC derivative market by introduction of new rules and measures. A proper implementation of the regulation needs to be continually assessed to determine the impact of its introduction. Increased standardization of OTC derivatives is not always possible and should not be considered as panacea for financial crisis.